The Effect of CEO Background Risks on Risk Taking and Firm Performance

The Effect of CEO Background Risks on Risk Taking and Firm Performance

A thesis submitted to Middlesex University in partial fulfilment of the requirements for the degree of Doctor of Philosophy

Aruoriwo Marian Chijoke-Mgbame

Middlesex Business School

Middlesex University

ABSTRACT

The motivation for this thesis is founded on the increasing studies on executive compensation as it relates to risk taking and firm performance which has resulted in inconclusive results. A large number of the empirical studies on executive pay have focused on agency theory alone to examine its effect on risk taking behaviour and firm performance. The purpose of this research is to contribute to existing knowledge on executive compensation by incorporating background risk theory as a means through which an understanding of executive compensation and its effects on risk taking and firm performance can be analysed. The background risk theory, suggest that the introduction of an additional risk when one has been committed to result in risk aversion. The study employs data from the London Stock Exchange with a sample of FTSE350 non-financial firms for the period 1997-2010. To achieve the objective of the study, the thesis is divided into three independent but related empirical chapters. The first examines the link between background risk and executive compensation-risk taking relationship. The second empirical chapter examines the effect of background risk on the relationship between executive compensation and firm performance. Lastly, the third empirical chapter examines some determinants of CEO background risk with a particular focus on CEO employment risk.

The findings of the first empirical chapter provide strong support for the background risk theory. The study finds that the presence of background risk results in lower risk taking by CEOs. In addition, the study provides instances where background risk combined with the risk in the compensation package leads to risk aversion and less risk taking by the CEO.

The second empirical chapter finds that even though compensation may result in better firm performance, the presence of additional risk known as background risk alters the relationship

between compensation and firm performance. Specifically, the presence of background risk leads to a negative relationship between compensation and firm performance.

The findings of the first two empirical studies inspired further research on the determinants of CEO background risk. The findings reveal that large boards and independent boards, increase the likelihood of CEO employment risk. However, CEO network size reduces the likelihood of employment risk.

DEDICATION

To God Almighty, in whom I move and have my being.

ACKNOWLEDGMENT

Firstly, I am grateful to God almighty for giving me good health, strength of mind and body, and journey mercies all through this period and for keeping my family intact, He is indeed a living God.

I would like to thank my wonderful supervisors, Professor. Ephraim Clark and Dr. Suman Lodh for their constant guidance, support and encouragement all through the period of this research, I couldn't have asked for better supervisors. I will also like to thank Dr. Yacine Belghitar for his contribution to the success of this research.

Secondly, I am hugely indebted to my husband Dr. Chijoke Mgbame, words cannot express my gratitude for your unflinching support and the sacrifice you have made to see that this project is completed. Like you always say, "it can be done", yes it can be done and it is done. To my daughters Bekah and Zarah who have endured not having me around for the past three years, finally the question "when are you coming home" is over. I'm not forgetting my super parents Engr. and Mrs Michael Adhekoyibo, who have been more than grandparents to my kids, thank you for your prayers and encouragement. I will also like to thank my siblings especially my big sister Oghogho aka mum, you are indeed the mother of the house. My gratitude also goes to my parents- in- law Elder and D'ness J.O. Mgbame for their constant prayers and encouragement.

To my best buddy Omena, you always have a way of cheering me up and listening to me even when you did not understand much of the Ph.D. process, your support and encouragement has gone a long way.

Thirdly, I will like to thank Prof. O.G. Oshodi, (former VC of University of Benin) for his support at the start of this programme. I am also thankful for the friends I made along the way, Maryam, Uzo, Joshua and other colleagues in the research office.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1: INTRODUCTION

1.1 Background of the study

The issue of executive compensation and its motive has been and remains a subject of strong debate in the frontier of finance research. This is especially so given various corporate scandals such as those involving Polly Peck, Maxwell, BCCI[1] and more recently that of RBS and its CEO, Sir Fred Goodwin[2]. The positive and negative consequences of the separation of ownership and control in modern corporations have rendered the concept of corporate governance very critical. This is due to the implications of these consequences for the efficient control of the assets of such corporations in the interests of shareholders and other stakeholders. The OECD defines corporate governance as "the way in which boards oversee the running of a company by its managers and how board members are in turn accountable to shareholders and the company".

The nature of modern corporations is characterised by diverse owners, such that the management of organisations has been placed in the hands of agents (managers) who are expected to manage the corporation in the interest of the owners (principal). It is, therefore, the responsibility of managers to maximise the resources of the firm to ensure maximum returns on owner's investments. However, given the rational nature of humans, managers are likely to have interests that are not compactable with those of the owners of the company. To address this potential principal-agent conflict, agency theorists (Jensen and Meckling, 1976; Murphy, 1999) propose a corporate governance mechanism whereby managers are compensated in a manner that would align their (managers) interest with that of the owners. Consequently, agency theory suggests

[1] See, Bogdanor A (2013) 'The sweet taste of corporate governance, the Cadbury way' obtained from http://www.managementtoday.co.uk/news/1168721/

[2] See, the Telegraph report: http://www.telegraph.co.uk/finance/personalfinance/pensions/4861923/Sir-Fred-Goodwin-True-cost-of-pension-is-30m.html

that corporate managers be allotted stocks and stock options of the company. The objective is for managers to see themselves as part owners of the firm and would be better motivated to work in the overall interest of the firm. This scenario describes the concept of executive compensation within the context of this study.

The level and structure of executive compensation employed by a company have potential implications for the firm, so that, the upsurge in executive compensation literature has led to the categorization of research in this area into two main groups (Devers et al, 2007). One strand of literature examines the relationship between executive pay and firm performance (Hubbard and Palia, 1995; Aggarwal and Samwick, 1999; Ozkan, 2011), mainly with the focus on exploring and determining the rationale for executive compensation which is premised on the ideas of agency theory. The second strand of research on executive compensation (Core and Guay, 2003; Coles, Daniel & Naveen, 2006; Carpenter, 2000; Lewellen, 2006) focuses on the effect of compensation on executive attitudes. Researchers in this group, argue that compensation may not always align the interest of managers with those of shareholders. They suggest that compensation produces different attitudes by managers to the extent that these attitudes affect the financial and investment decisions made by the executives of the firm.

The way in which executive compensation affects companies and their outcomes has been extensively addressed in prior studies (Sanders and Hambrick, 2007; Low, 2009). The results of which have provided inconclusive results. For example, Ozkan(2011) examines a sample of non-financial firms in the UK. The study reveals a positive relationship between CEO cash compensation and firm performance, but finds no significant relationship between CEO total compensation and firm performance. The results suggest that cash compensation is a stronger motivation for CEOs to improve firm performance. A similar study by Gregg et al (2005) for a large sample of UK firms find a weak relationship between CEO cash compensation and firm

performance. The difference in their results may be attributed to the fact that they failed to consider the sensitivity of the CEO's compensation to its stock price which could have direct consequences on firm performance. McKnight and Tomkins (1999) examine the effect of the different components of the remuneration package on firm's performance. They find that there is a strong positive relationship between executive compensation and firm performance. In examining executive bonuses, Guo et al. (2006) find that there is a significant positive relationship between firm performance and the amount of bonus received by executives. Other strands of research have attempted to find a link between executive pay and other firm outcomes. For instance Coles et al. (2006) explores the effect of managerial compensation and firm's risky policies. The study reveals that CEO delta[3] results in riskier investment policies. Likewise, Core and Guay (2002) report a positive relationship between CEO delta and growth opportunities.

Contrary to the above studies, the managerial entrenchment hypothesis predicts a negative relationship between managerial compensation and firm performance. For example, Short and Keassey (1999) show that higher levels of managerial ownership encourage entrenchment and subsequent poor firm performance. Similarly, Davies et al. (2005) reveal that managerial ownership higher than 50% results in poor firm performance. Also, Belghitar and Clark (2014) find a positive relationship between cash compensation and firm cash holding suggesting increased agency costs for firms with CEOs having higher cash compensation which could lead to poor firm performance.

The above studies have shown that there is no conclusion as to the direction of the effect of executive compensation on firm's outcomes. A plausible reason for this divergent result is that there may be some other factors affecting the executives especially the CEO that may have an

[3] CEO Delta is the £ change in CEO firm based wealth for a 1% change in firm stock price.

indirect effect on firm's outcome. One of such factors which previous studies have failed to consider is the background risk confronting the CEO.

The compensation package is designed in such a way that a large part of it is tied to the performance of the stock price. It, therefore, means that there is an inherent risk associated with the compensation which may result in different risk attitude depending on the risk appetite of the executive. There is, however, another type of risk known as background risk which the CEO may be exposed to in addition to the risk in the compensation package. Background risk theory (Kimball, 1993) proposes that in the presence of an additional risk to the inherent risk, individuals would exhibit risk aversion. That is, rather than executive compensation motivating managers to take up more risk to maximise the value of their compensation and shareholders wealth, the presence of another risk(s) in the background may add to the risk burden of the executive. Truly, agents would not ignore such background risk which may have dire consequences both for the executive and the firm. ***The question, therefore, is what is the effect of this background risk on the relationship between executive compensation and risk taking and firm performance?***

This introductory chapter begins with a background of the argument and concerns surrounding executive compensation which is a source of motivation for this empirical research. The second section presents the research motivation and overview of the study with particular focus on risk aversion and background risk. The third section examines the research questions put forward in the current study. Closely followed in section four are the research objectives. The penultimate section highlights the research contribution to the existing body of knowledge. While the last section presents the structure and organisation of the thesis.

1.2 Overview of the Study and Research Motivation

A typical attitude which managers exhibit in response to the compensation package is made obvious in their risk attitude. This could be explained by the nature of the consequences of accepting compensations and functioning as managers, to the extent that managers become under-diversified in terms of human and capital resources. Executive compensation is a corporate governance mechanism that ensures the alignment of interest between managers and shareholder. Most of the existing studies (Benito and Conyon, 1999; Conyon and Sadler, 2010; Ferri and Maber, 2013, Ozkan, 2011) tend to emphasise the effect of pay on performance or vice versa. Still some others (Ross, 2004; Low, 2009; Armstrong, 2007) focus on the effect of pay on the risk taking behaviour of executives. In all these, none has examined the influence of a third factor such as background risk that may affect the relationship between executive pay and risk taking/performance which could lead to risk aversion. The motivation of this research is therefore premised on the divergent and inconclusive results from previous studies on the relationship between executive compensation and firm's outcomes like risk taking and firm performance.

1.3 Research Questions

Although there is a handful of research (Heaton and Lucas, 2000; Baptista, 2008; Gollier and Prat, 1996) on the effect of background risk on portfolio selection based on utility maximisation, mean-variance analysis or expected utility theory, these studies, however, focus on individual investors. To the best of our knowledge, there is no study that has empirically investigated the effect of background risk on the relationship between executive compensation and risk taking/ firm performance. Studies that have examined background risk either do so in a conceptual or theoretical context. However, a few studies (Cardak and Williams, 2009; Heaton and Lucas, 2000) have empirically examined background risk mainly employing survey data with the central focus on individual investors. This research presents a novel attempt to provide empirical

evidence on the effect of background risk on the CEOs of large publicly traded companies in a developed economy with a specific focus on the UK. A natural line of inquiry in a study of this nature is to also examine those corporate governance mechanisms that may determine the background risk faced by the CEO. The focus is on CEOs of the firm because they have more flexibility than other executives so that their actions or inactions could result in great consequences for the company. The primary responsibilities of the CEO are decision making, setting the strategy of the company and shaping the organisational structure. Therefore, they are mostly held accountable for the failure of the firm (Bertrand and Mullainathan, 2003).

It is against this backdrop that the study attempts to provide answers to the following questions which are addressed in three empirical chapters;

1. What is the effect of background risk on the relationship between executive compensation and risk taking?
2. What is the effect of background risk on the relationship between executive compensation and firm performance?
3. What are the determinants of CEO background risk?

1.4 Objective of the Study

A major problem that motivated this research is the fact that numerous studies on executive compensation have only focused on executive compensation as a determining factor of risk taking and firm performance. Also, the recent studies have provided divergent results on the pay /risk taking or performance relationship. Apart from the inconclusive results emanating from most studies on the relationship between compensation and risk taking or firm performance, these studies have not also considered the moderating effect of background risk on the relationship between executive compensation and firm outcomes. A possible explanation for these divergent results is that they have concentrated mainly on agency theory as the

fundamental theoretical framework that could provide a foundation for studies of this nature. Arising from such conflicting and inconclusive results on pay/ risk taking or firm performance relationship, it has become imperative to examine another strong but completely ignored theory (known as background risk theory) which we suspect could facilitate an understanding of the relationship between executive compensation and risk taking on one hand and executive compensation and firm performance on the other hand. Specifically, the research examines two types of background risks (CEO employment risk and CEO tenure) with respect to CEOs. These risks have the potential to influence the risk taking behaviour of CEOs and firm performance.

In the light of the foregoing, the specific objective of this research is to add to the existing literature on the effect of compensation on both risk taking and firm performance. Alongside the assumptions of agency theory, we incorporate the background risk theory to examine first, the effect of background risk on risk taking and firm performance, then to examine the effect of background risk on the relationship between compensation and risk taking and firm performance. In addition, this research will attempt to examine some determinants of CEO background risk.

1.5 Research Contribution to Knowledge

One of the motivations of the study is the perceived gaps in existing literature and current practical issues on executive compensation. This research contributes to the existing body of knowledge on executive compensation studies. The study also provides a viable theory; background risk theory that compliments the agency theory through which executive compensation and related issues can be addressed.

The objective of this study was achieved in three independent but related chapters. Hence, the contributions to knowledge have been classified into three categories- theoretical, empirical, and methodological. The contributions are presented below within the premise of the empirical chapters respectively.

Theoretical contributions

From the first empirical chapter (Chapter 3), the aim is to examine the effect of background risk on risk taking and the effect of background risk on the relationship between compensation and risk taking. The study begins with agency theory by providing conditions by which CEOs can be motivated to engage in profitable risky projects for better shareholders returns. Previous studies (Coles et al, 2006) argue that executive stock options will motivate otherwise risk averse managers to become less risk averse. But this study reveals that earlier inconclusive results from previous research may be flawed by the fact that they fail to consider background risk. In particular, this study shows that CEOs become risk averse in the presence of background risk. Thus, by extending the assumptions of agency theory and considering the effect of background risk, we show that CEOs may behave differently when making risky decisions.

A necessary outcome of risk taking is performance. Therefore, the next empirical chapter (Chapter 4) examines this issue in the light of executive compensation. If CEOs engage in positive NPV projects, firm performance will improve, if not performance declines, this is according to the risk-return theory (Fama, 1980), that the higher the risk the better the returns through better firm performance. In line with the background risk theory (Kimball, 1993) that suggests risk aversion in the presence of additional risk, the chapter contributes to the executive compensation – performance literature by emphasising that current research needs to incorporate background risk theory in analysing the effect of compensation on firm performance.

The last empirical chapter contributes theoretically to the corporate governance literature by identifying some corporate governance mechanisms that determine the background risk of the CEO. It is not enough to know the effects of background risk on firm's outcome like risk taking

and firm performance, but knowledge of its determinants will help in addressing the effects of background risk to improve firm performance which is the goal of any organisation.

Empirical contribution

The first empirical chapter (Chapter 3) contributes to the current empirical studies in a number of ways;

i) The study extends the current research on the relationship between executive pay and risk taking (e.g.; Armstrong, Larcker, Ormazbal and Taylor, 2013; Low, 2009; Gao, Harford and Li, 2009) by providing evidence that CEO compensation does not always result in risk taking. The study provides new evidence that in the presence of background risk, CEO employment risk and CEO tenure results in risk aversion which is observed by reduced risk taking. This is irrespective of the incentive provided by compensation package for more risk taking.

ii) Contrary to the idea that CEO compensation would be a motivation for more risk taking, the study shows that in the presence of background risk CEO compensation will not always result in more risk taking. Thus, emphasising that the combined effect of compensation risk and background risk is increased risk aversion.

iii) Unlike previous studies in finance (Coles et al, 2006; Armstrong, 2007) that utilise one or two variables independently to capture risk taking, the study employs a composite measure of risk taking. To the best of our knowledge, this is the first study using a comprehensive set of variables in a composite form to measure risk taking in the finance literature. The only notable exception is the study by Martin et al (2013) in management science that employs a composite measure of risk taking for manufacturing firms in a US study.

Having examined risk taking in the first empirical chapter, the second empirical chapter (Chapter 4) examines the effect of background risk on firm performance on one hand and the effect of background risk on the relationship between compensation and firm performance. It is important to note that although there is an extensive body of research on compensation and firm performance, these have generally ignored the effect of other factors on the pay-performance relationship- a gap that this study sets out to fill. Chapter 4 therefore, complements and extends previous research in different ways;

i) The study shows that background risk results in poor firm performance. That is, alone, the effect of background risks such as employment risk and CEO tenure results in risk aversion and subsequent poor firm performance. To buttress this finding, the results show that the interaction of background risk and compensation leads to poor firm performance. This again shows that even though according to agency theory compensation is meant to improve firm performance, in the presence of background risk there would be increased risk aversion and the resulting effect is poor firm performance.

Finally, the third empirical chapter (Chapter 5) contributes to the corporate governance literature. This is done by examining some corporate governance mechanisms as determinants of CEO background risk with a focus on CEO employment risk.

i) Specifically, the study shows that large boards are ineffective to the extent that the inadequacies of the board result in poor firm performance which increases the likelihood of CEO employment risk.

ii) Also, the study provides evidence that independent boards are more effective to the extent that they discipline poorly performing CEOs. Thus, indicating that board independence increases the likelihood of employment risk.

iii) The study also shows that CEO networks actually reduce his employment risk, contrary to evidence in prior research (Liu, 2014).

Taken together, this fifth empirical chapter contributes to the existing knowledge on corporate governance showing that corporate governance mechanisms are determinants of the level of CEO background risk. To the best of my knowledge, no study has empirically investigated the determinants of CEO background risk from a corporate governance perspective.

Methodological Contribution

To achieve the stated research objectives, series of methodological techniques are employed. Given the potential presence of endogeneity in this type of study, previous research examining issues in corporate governance relating to executive compensation have utilised either fixed effect regression, two or three stage least squares or instrumental variables regression (Black et al. 2006; Rajgopal and Shevlin, 2002). This study, however, employs the Arellano and Bond (1995) and Blundell and Bond (1998) dynamic GMM model which controls for the persistent nature of the dependent variables used in Chapters three and four and other endogeneity issues. To the best of my knowledge, no study has employed such technique in the literature on background risk with respect to compensation and risk taking/ firm performance.

1.6 Structure of the thesis

This section highlights the structure of the thesis with a brief overview of the contents. The thesis is divided into six chapters. Chapter one which is the current chapter presents the background

and overview of the study as well as the underlying research motivation and related research questions. It also presents the main objectives of the study. Lastly, it highlights the main contribution of the current study to existing body of knowledge.

Chapter two presents an overview of corporate governance and the development of corporate governance codes in the UK. It is followed by a review of executive compensation in the UK which is an offshoot of corporate governance. The theoretical background of executive compensation is explored alongside the components of executive pay packages. The chapter also examines some pertinent determinants of executive compensation.

Chapter three attempts to provide empirical answers to the first research question. Specifically, the chapter examines the effect of background risk on risk taking and the effect of background risk on the relationship between executive compensation and risk taking. To achieve this, the chapter presents existing literature on the different views of the relationship between compensation and risk taking. Thereafter it provides a review of the measures of risk taking that have been employed in previous studies with a justification for the method used in the current study. Alongside, appropriate hypotheses were developed in order to analyse the results obtained using appropriate estimation techniques. Lastly, empirical results are presented and analysed with conclusions drawn.

Chapter four makes an attempt to address the second research questions. Specifically, it investigates the effect of background risk on firm performance and the effect of background risk on the relationship between compensation and firm performance. The chapter includes a review of existing literature on executive compensation and firm performance from which hypotheses were made. Using appropriate statistical techniques, empirical results were obtained which were later presented and discussed.

The penultimate chapter which is the fifth present's the empirical answers to the third research questions which seek to identify the determinants of background risk. As in other chapters, this chapter presents a review of prior literature with hypotheses development. The data and sample utilised for the study were discussed. To achieve the aim of providing answers to the questions raised, appropriate methods were employed from which results were obtained and discussed thereafter.

Chapter six which is the last chapter concludes the research project by providing detailed summary regarding the findings of each empirical chapter. Finally, this chapter describes the main limitations of the study, therefore providing some suggestions for future research in the subject area and also discusses policy implication of the study for practitioners.

CHAPTER 2: CORPORATE GOVERNANCE AND THEORETICAL PERSPECTIVE OF BACKGROUND RISK AND EXECUTIVE COMPENSATION IN THE UK

2.1 Introduction

The collapse of many high profile corporations has brought so many questions to mind as regards the reliability of financial statements. These corporate collapses have affected many investors negatively and reduced the confidence of investors in the stock market. The question now is what can be done to restore the confidence of investors? The answer to this question, according to Mallin (2010) can be linked to corporate governance. What then is corporate governance? Shleilfer and Vishny (1997) defines corporate governance as "the way in which suppliers of funds to a corporation assures themselves of getting a return on their investment". It deals with the way managers manage the resources at their disposal to the benefit of contributors. The Organisation for Economic Cooperation and Development (OECD) (1999), defines corporate governance as "the way in which boards oversee the running of a company by its managers and how board members are in turn accountable to shareholders and the company". It also provides a structure through which the aims and objectives of a company are set and ways for ensuring those goals are met and in line with the interest of shareholders and other stakeholders. The Cadbury (1992) report of the UK combined code defines corporate governance as "the system by which business corporations are directed and controlled". This is very important to the integrity of corporations and maintaining the trust of investors and other market participants. It is assumed that good corporate governance is one of the issues considered by investors before making investment decisions. They are willing to pay an additional cost to firms with good corporate governance practice and strong independent boards (Epps and Cereola, 2008).

The objective of this chapter is to examine the development of corporate governance codes in the UK and to present the recommendations of the different codes and how this relates to current practices. This chapter also discusses the underlying theories of executive compensation and the different views. As a consequence, the components of executive pay, as well as its determinants, are examined.

2.2 Corporate Governance in the UK and Development of Codes

Corporate governance in the UK has witnessed substantial changes which are continuously being reviewed with the aim of fostering good corporate governance systems. According to the Financial Reporting Council (2010), the UK corporate governance approach begins with the idea that good governance is the key that can enhance the board's ability to effectively manage the resources of the company and be accountable to shareholders. The Cadbury report (1992) states that;

> "…the country's economy depends on the drive and efficiency of its companies, the effectiveness with which boards discharge their responsibilities determines Britain's competitive position. They must be free to drive their companies forward, but exercise that freedom within a framework of effective accountability. This is the essence of any system of good corporate governance"

Unlike the US regulatory-led approach to corporate governance, the UK corporate governance system is shareholder-led, based on the principles of "comply or explain". The shareholder-led approach has a historical background which relates to the post-war period. High income tax in that period made it difficult for individuals to become shareholders. But because the law favoured pensions (pensions were exempted from tax) there was rapid growth of mutual funds and pension companies. So that by the 1960s' institutional investors began to advocate for better

governance systems and controls to protect their interest in companies[4]. This has led to greater power for shareholders (institutional) in the UK where they require companies to "comply or explain".

The 'comply or explain' approach is however backed by regulators like the Financial Services Authority (FSA), the Company Law as well as the London Stock Exchange (LSE). For example, the company law requires companies to prepare annual reports to be made available to all shareholders. This is to ensure that shareholders and investors have sufficient information about the company to enable them make judgment about the performance of the firm and governance system in place. The company law also gives shareholders the right to hire and fire directors and call for extraordinary general meetings in certain circumstances. The LSE has its listing rules which listed companies must adhere to.

In the UK, corporate governance has evolved over the years revolving around the stock market. The UK stock market can best be described as a strong, developed and mature market with proper regulation for each sector. Like every other market around the world, it has its fair share of problems. The major problem with any company is the agency problem. Shareholders are continually trying to make managers do that which is for their (shareholders) best interest. This has led to the development of corporate governance mechanisms to mitigate these problems. The following section describes the various corporate governance codes and their main recommendations.

[4]Speech by SEC staff: remarks on UK and US approach to corporate governance delivered at the Institute of Chartered Accountants in England and Whales London UK on January 9, 2007, http://www.sec.gov/news/speech/2007/spch020807et.htm

Cadbury Report (1992): The Financial Aspects of Corporate Governance

In the wake of major corporate scandals involving Polly Peck, Maxwell and BCCI[5] and controversy over directors' pay, the Financial Reporting Council (FRC), the London Stock Exchange and the accountancy profession decided to set up a committee to look into the standards of financial reporting and accountability of UK companies. The committee was chaired by Sir Adrian Cadbury and produced a final report on "The financial aspects of corporate governance" which was published in December 1992 taking effect from June 1993. This is now known as the Cadbury report. The report recommends amongst other issues a code of Best Practice which all public companies in the UK must comply with. If not, they should clearly explain why they have not, hence the phrase "comply or explain". The recommendation of the code of best practice was concerned with the composition and independence of the board. The particular recommendations made by Cadbury (1992) report are;

- Every company should be headed by an effective board.
- The board should be made up of executive and non-executive directors
- There should be a chairman who is the head of the board separate from the chief executive officer.
- All boards are required to have at least three non-executive directors who should be independent (that is apart from receiving directors' fees and shareholding; they should not have any business relationship with the company that can affect the objectivity of their decisions.
- All boards should have a remuneration committee responsible for making recommendations on the remuneration of executive directors.

[5] Bogdanor A (2013) 'The sweet taste of corporate governance, the Cadbury way' obtained from http://www.managementtoday.co.uk/news/1168721/

- All boards should have an audit committee comprising of at least three independent non–executive directors and should meet at least twice a year.
- The duty of the audit committee is to make recommendations to the board on external auditor, audit fees and review any issue relating to audit and make recommendations to the board.

After the publication of the code, the London Stock Exchange (LSE) incorporated it as part of its listing rules, requiring companies to state in its annual reports if they have complied with the code, if not they should give reasons for noncompliance. The release of the Cadbury report marks the beginning of a massive change in the governance practice of many companies in the UK.

Greenbury Report (1995): Directors' Remuneration

Following increased public and shareholders concern on directors' remuneration especially in private companies where pay levels were rising without corresponding increase in firm performance. The Confederation of British Industry (CBI) in 1995 set up a study group chaired by Sir Richard Greenbury then chairman of Marks and Spencer Plc. The duty of the committee was to look into issues regarding directors pay and other remuneration in the UK. Their terms of reference were "to identify good practice in determining directors' remuneration and prepare a code of such practice for use in UK PLCs", (Greenbury report, 1995). Like the Cadbury report, the recommendations of the Greenbury report were incorporated into the listing rules of the London Stock Exchange. But unlike the Cadbury report, it was not widely accepted as it did not properly address the issues relating to remuneration as demanded, (Jones and Pollit, 2004).

The findings and recommendations made by the committee as published in the Code of Best Practice on Directors' remuneration was divided into four main aspects (Greenbury (1995);

- *Remuneration Committee*: apart from having a remuneration committee responsible for determining pay packages of directors', the committee should comprise of non-executive directors, make a formal report each year to be included in the annual reports and accounts, also the chairman of the committee should be accountable to shareholders.
- *Disclosure and Approval*: the report presented to shareholders should disclose in detail for each named director the different component of the pay package. If need be, shareholders should be invited to approve new long-term incentive scheme.
- *Remuneration Policy*: the committee should determine the remuneration policy of the company and ensure that all long-term incentive schemes paid by firms are subject to appropriate firm performance criteria. It also specifically states that directors should not be rewarded for increase in share price which could be a result of inflation or general market conditions which may be far from managerial actions.
- *Service Contracts and compensation*: the remuneration committee should consider what compensation should be made to departing directors in case of early retirement especially for poor performance. Particularly, director's service period should be a period of 12 months or less as against three years suggested by the Cadbury report.

Hampel Report (1998): Committee on Corporate Governance

In 1995, the Federal reporting Council set up a committee chaired by Ronald Hampel to review the recommendations made by the Cadbury and the Greenbury committee. The committee, however, did not make any new requirement but rather approved the recommendations of the

first two committees but suggests a need for enhanced shareholder value. The emphasis of the report was on good corporate governance**.**

The terms of reference of the committee were; Hampel Report (1998):

"…that the committee will seek to promote high standards of corporate governance in the interests of investor protection and in order to preserve and enhance the standing of companies listed on the Stock Exchange. The committee's remit will extend to listed companies only. Against this background the committee will:

(a) conduct a review of the Cadbury code and its implementation to ensure that the original purpose is being achieved, proposing amendments to and deletions from the code as necessary;

(b) keep under review the role of directors, executive and non-executive, recognising the need for board cohesion and the common legal responsibilities of all directors;

(c) be prepared to pursue any relevant matters arising from the report of the Study Group on Directors' Remuneration chaired by Sir Richard Greenbury;

(d) address as necessary the role of shareholders in corporate governance issues;

(e) address as necessary the role of auditors in corporate governance issues; and

(f) deal with any other relevant matters.

Without impairing investor protection, the committee will always keep in mind the need to restrict the regulatory burden on companies, e.g. by substituting principles for detail wherever possible", (Hampel Report, 1998). The main principles of good governance highlighted includes; the separation of the position of the Chairman and Chief executive officer, the need for every

company to have a balanced board, all directors should be eligible for re-election, the board should uphold a sound system of internal control to protect shareholders investment. The report also stressed the need for shareholders especially institutional investors to play an active role in the company they invest in. The final report emphasised the need for good governance rather than stating explicit rules to be followed. The aim was to reduce the regulatory burden on companies and avoid "box-ticking" so that the rules are flexible enough to be applied according to the particular situation of the company. The combination of these three reports brought about the Combined Code (1998).

Turnbull Report (1999) Internal Control: Guidance for Directors on the Combined Code

Although the Hampel Report emphasised the need for a sound system of internal control, there was no specific guideline on how it should be addressed. Hence, the institute of Chartered Accountants in England and Wales (ICEAW) and the London Stock Exchange decided to set up a committee (Internal Control: Guidance for Directors in the combined code) chaired by Nigel Turnbull. The final report of the committee was published in September 1999. The committee clarified the elements of a sound system of internal control stating that it should comprise of "policies, processes, task, behaviour" and any other facet of the company that will improve the effectiveness and efficiency of the company's operation the responsibility of which lies with the board. The report emphasises that a sound system of control should not be a one-off activity but should be entrenched in the day to day operations of the company so that it becomes part of its culture. Such a system should be aware of the potential risk the company faces and those that may arise from the external environment, and make available methods to handle such risk. Accordingly, there should be a defined process for reviewing the effectiveness of the internal control system which should be monitored continuously with an annual assessment. Finally,

there should be a statement in the annual report and accounts of compliance with the code and a summary of how it has been applied.

In 2004, the Financial Reporting Council (FRC) established a Turnbull review group to assess the impact of the code on company process and if necessary include an update. After wide consultation, the review committee found it was widely accepted and implemented according to its initial objective with boards and investors admitting it remarkably improved risk management standard and internal control process (Revised Turnbull Guidance 2005). In fact, 58% of businesses surveyed agreed it was timely as they were in dire need of an improved internal control system, (Kingsmill, 1999).

Myners Review (2001 & 2004) Institutional Investment in the UK: A Review

The Chancellor of the Exchequer in March 2000 requested that Paul Myners examine if there were distortions in the investment decision making process of institutional investors. In a review published in 2001, it was observed that there were flaws regarding the system of governance in investment companies, especially in pension funds. The review discovered that more often than not, savers funds were not being invested in their interest, trustees of pension funds lack the required knowledge and resources and as a result, they overburden investment consultants/companies who have a narrow range of expertise. Not only that the performance of these consulting firms are not assessed to know their efficiency, other flaws in the system then were improper allocation of assets (as regards the market to invest in as against the stock to invest in), there was also lack of clarity of objectives and vague time scales given to fund managers. The objectives of pension funds were often not in sync with the objectives of the fund managers, thus giving fund managers herding incentives. Similarly, there was no timescale after which the performances of fund managers are measured. Lastly, brokerage commission paid to

fund managers were not properly disclosed or accounted for. At the end of the review, a set of principles was published which includes; effective decision making for pension funds should be left in the hands of those with expertise, resources as well as proper information. Secondly, trustees should set the objectives of the fund to be in line with the circumstances of the fund. Thirdly, fund managers should be given clear mandate covering its objectives and proposed timescale after which performance would be assessed. Moreover, pension funds should be prepared to pay appropriate fees that will attract a broad range of actuarial and investment advisers. Like the Cadbury and other codes, the Myners review recommended a 'comply or explain' approach and requested a review after two years.

Consequently, a review was published in 2004. The Myners review of 2004 recorded substantial compliance with some of the principles provided by the 2001 review. However, certain aspects lacked progress. For example, there were still low levels of skills and expertise on the part of trustees, poor asset allocation decisions and lack of clarity as to time scale for the measurement of fund manager's performance. To address these areas, legal requirements were introduced to ensure that trustees are better skilled at investment decision making. To this end, trustees are to obtain a qualification (Certificate in Trustee Knowledge and Understanding) from the Pension Management Institute (PMI). Also, the chairman of a pension fund is responsible for ensuring that board members possess necessary skills and has enough information for the purpose. To properly allocate assets, the review requires trustees to dedicate more resources like time and financial and human resources devoted specifically to asset allocation. Even though the Myners review of 2001 recommended that trustees separate the contract for investment advice and actuarial advice, the 2004 review recommends the separation of investment advice into manager selection advice and strategic asset allocation advice contract. With regards to timescale, the 2004 review recommends that trustees should be explicit on the strategy, benchmark for

performance, as well as time horizon for performance evaluation. Finally, trustees are required to publish a statement of investment principles (SIP) stating its compliance with the provisions of the review, same should be posted on the fund's website and key information on the fund's performance should also be sent to members.

In March 2008, an update of the Myners principle was issued with no dramatic change, but on continued voluntary compliance with the principles especially proper disclosure if not explanations should be provided for noncompliance.

Higgs Report (2003): Review of the Role and Effectiveness of Non-Executive Directors

The corporate scandals in the US involving WorldCom, Tyco and Enron in 2002 led to a wake-up call for the UK government to check that its house is in order to avoid any of such scandals in the UK. Hence, the UK government commissioned Sir Derek Higgs in 2002 to look into the role and effectiveness of non-executive directors (NED). NEDs have a pivotal role in any company's board to protect the interest of shareholders and to make decisions that will maximise the value of the firm. They do not have and should not have any relationship with the company other than decision making and the only financial interest should be the directors' fee. In addition to having the required skills and knowledge for being a director, the Higgs report emphasises that a prerequisite for the effectiveness of non-executive directors is total independence. The report sets out the following criteria for independence of NEDs (Higgs report, 2003), that NEDs;

- Must not have been an employee of the company in the last five years
- Should not have any direct or indirect material business relationship with the company within the last three years,
- The only remuneration should be the directors' fee,

- Should have no close family relationship with any director of the company or company advisers.
- Should not have cross-directorship with other directors.
- Should not be a representative of a significant shareholder.
- Should not have served on the board for a period more than ten years.

The published Higgs report builds on the recommendations of the combined code but with the concentration on NED's effectiveness. Although the existing combined code suggests the need for an effective board, there was no clear definition of the role of NEDs. The Higgs report clearly states that the role of NEDs includes contributing to the company's' strategy, assessing the performance of management to see if they meet stated goals as well as ensuring proper reporting of such performance, checking the accuracy of financial information and the effectiveness of internal controls such as risk management. It also recommends that there should be a Senior NED who will act as a link between shareholders and the company if the Chairman is not readily available. Also, NEDs should be responsible for determining executive remuneration, appointing and dismissal of senior management. The Higgs report recommends that the number of meetings held with attendance should be stated in the annual reports. Apart from the chairman, the board should have at least half of its members as independent NEDs. Another aspect of change relates to the separation of the chairman and the CEO. Though the combined code requires this, the Higgs report recommended that the responsibilities of the two positions be clearly written and agreed by the board.

With regards to recruitment and appointment, the report recommends the establishment of a nomination committee comprising mainly of independent NEDs and be chaired by a NED. There should be formal comprehensive induction program for newly appointed NEDs, these NEDs should normally have two three year term if not there should be an explanation to shareholders

for longer serving NEDs. With respect to remuneration, NEDs should be paid according to their responsibilities taking into account the complexity and workload involved.

Although the recommendations of the Higgs report were initially widely accepted, there was criticism over the function of a senior NED (suggesting that it would undermine the position of the chairman or duplicate roles) and the nominating committee being chaired by a NED. Consequently, the Financial Reporting Council (FRC) set up a working committee to consider these issues raised. In the end, a revised code was published known as 'Good practice suggestions from the Higgs report'.

In March 2011, the FRC published Guidance on Board Effectiveness[6] which was to replace the good practice suggestions from the Higgs report. The 2011 guidance on board effectiveness emphasised the need for an effective board rather than just NEDs. It is intended to motivate boards to be more effective in the decision-making process by considering their attitudes and other factors that can affect their decisions. It further clarified the role of the senior NED which is basically to assist the chairman and take responsibility for a smooth succession of the chairman. As with other codes, this guidance recommends the continued adoption of the comply or explain principle bearing in mind the particular circumstance of the company.

Smith Report 2003: Audit Committees Combined Code Guidance

As consultations were going on with the Higgs review of NED effectiveness, a similar independent group set up by the FRC was simultaneously consulting on the role and responsibilities of audit committee. This was chaired by Sir Robert Smith. Its recommendations were incorporated into the combined code on corporate governance which is now part of the listing rules of the LSE. The aim of the report was to clarify the duties and responsibilities of

[6] ICAEW- Guidance on board effectiveness: http://www.icaew.com/en/library/subject-gateways/corporate-governance/codes-and-reports/guidance-on-board-effectiveness

board audit committee which is to ensure the independence of the external auditor. The report issued in January 2003 followed the principle of 'comply or explain', and in compliance should consider the particular circumstance of its company and audit committee. The main recommendations include; the establishment of an audit committee responsible for monitoring the integrity of the financial statements, review the company's internal financial control and risk management systems, to monitor and review the effectiveness of the company's internal audit function, to make recommendations to the board for suitable external auditor, to approve the remuneration and terms of engagement of the external auditor, to monitor and review the external auditor's independence, objectivity and effectiveness and to develop policies that guard the external auditors independence and the provision of none audit services by the external auditor. Companies are required to state in their annual report these policies and how it has been applied. A significant recommendation made was the provision of "whistle blowing" system. Audit committees are required to make arrangements whereby employees can raise concerns about misconduct especially regarding financial reporting and control. The audit committee should have a process in place to immediately investigate and address any matter raised.

Other recommendations made by the report includes; the audit committee should be provided with a written terms of reference. The committee should include at least three independent NED, appointment to the committee should be for an initial period of three years but can be extended for another two three-year terms. To maintain the independence of the committee, the chairman of the board should not be a member of the committee. The committee should meet at least three times a year or more depending on the need with no other member of the board attending unless there is a need for such a member to be in the meeting. Companies are expected to provide the audit committee with enough resources and information necessary to discharge their duties and

such resources should be readily accessible. Finally, at least, one member of the committee should have "significant recent and relevant financial experience".

Combined Code (1998- 2008)/ Corporate Governance Code (2010-2014)

Corporate governance in the UK has seen many stages which have resulted in changes to the codes of best practice. The code of best practice is continuously being reviewed to ensure companies carry out their businesses in an orderly manner which is for the best interest of investors and shareholder. Most of these codes have been incorporated in the listing rules of the London Stock Exchange.

The 1998 Combined Code (Principles of good governance and code of best practice) is a combination of the recommendations of the Cadbury, Greenbury, and Hampel reports. The 1998 combined code is made up of two sections. Section one deals with the corporate governance principles covering the board and its operations, separation of the position of Chairman and CEO, directors' remuneration, relations with shareholders, accountability and audit. Section two concerns the institutional shareholders – their voting rights, dialogue with the company and evaluation of governance disclosures. In addition, the code recommends that board have a sound system of internal control in place to ensure that shareholders investment are safe and that an annual review of the internal control process should be carried out to ascertain its effectiveness.

In July 2003, a revised combined code was issued which replaced the 1998 combined code. It consolidates the recommendations of the Higgs and Smith reports on the role and effectiveness of executive directors and audit committees respectively. Its implementation started with companies having their financial year beginning on or after November 1st, 2003. A notable point of departure from the previous code is that it recommends that 'undue reliance should not be placed on a particular individual, to the extent that he/she becomes a member of all three sub-

committee. Also, given the criticism of the role of senior independent director (SID), the code clarified the role of the chairman and the SID. While the chairman remains the head of the board and remains the link between the company and shareholders, the SID is to support the chairman of the board. The code also suggests the establishment of board sub-committees (audit, remuneration and nomination committees) and that there should be a formal procedure for appraising the activities of board sub-committees.

The FRC issued an updated version of the code of corporate governance in 2006 which replaces the 2003 code. Companies are to voluntarily apply the code from financial year beginning on or after 1st November 2006. There was, however, no substantial change except in three areas (Corporate governance code, 2006);

- The chairman of the board (COB) can serve on the remuneration committee but not the chairman of the committee if he (the COB) is considered to be independent at the time of his appointment.
- The proxy vote forms sent to shareholders should have an option of 'vote withheld' to enable shareholders who have reservations against a resolution to withhold their votes. It is not to be counted as a vote neither is it counted as a vote against.
- The code recommends that companies should publish in detail proxy votes lodged at general meetings where voting is by a show of hand. Also to be published on the company's website is the terms of references of board committees.

To further strengthen good corporate governance practice in the UK, the 2006 code was reviewed and updated in 2008. The findings of the review revealed that the 2006 code was generally supported and implemented. There was, however, two main changes; firstly, removal of restrictions preventing individuals from chairing more than one FTSE100 company. Secondly,

companies outside the FTSE350 can have their chairman on the audit committee provided he is considered independent at the time of appointment.

After due consultations with the public and stakeholders the FRC published a new code in 2010, but now to be known as UK Corporate Governance Code (2010) which still maintained the 'comply or explain' approach to implementation. Mallin, (2013) highlights the six main changes that were made in the new code namely;

1) Accountability: there should be an annual re-election of directors of the FTSE350 companies.
2) Risk: the former combined code did not include risk determination as part of the responsibility of the board. The FRC considers this as an omission and recommends that the board should determine the nature and extent of risk it is willing to take to achieve its objectives, this is to be included in a business model.
3) Performance: FTSE350 companies are to conduct an external board evaluation every three years to review its effectiveness
4) Board Balance: in making selection to the board, due regards should be given to skills, experience, independence as well as diversity especially in gender, this is to ensure the board is balanced and avoid 'group think'.
5) Directors' responsibility: the chairman is to continue to be the leader of the board, but the non-executive directors should be able to offer constructive challenges. Board members should be able to commit more time to board meetings.
6) Performance related pay: pay should be designed in such a way that it reflects the long-term interest of the company and the company's' risk policies and system. Also, when appropriate, companies should consider cutting down aspects of variable pay.

The recommendations of the new code were widely accepted, but critics were of the opinion that annual re-election of directors will destabilise board and give room for 'short-termism'.

As an ongoing process, there was another review of the corporate governance code in 2011, which took effect from financial years beginning on or after 1st October 2012. There was however limited changes which are intended to enhance accountability, continuing with the 'comply or explain' approach. The major changes affected external audit contract which should now be considered every ten years by way of open tender; audit committees are to provide information to shareholders on how they have discharged their responsibility especially with regards to the effectiveness of the external audit process; the board is to confirm that the annual report and accounts prepared shows a fair and balanced view of the company and represents the true performance of the company; companies are to report policies and steps taken to ensure boardroom diversity.

On the 12th of September 2014, the FRC released an updated version of the UK Corporate Governance Code. This was mainly to improve the quality of information made available to investors as regards the long-term health and strategies of listed companies. It also stressed the need for proper risk management. The code now requires the board to include a 'viability statement' in its strategic report which will give a wider assessment of the company's long-term solvency and liquidity covering a period more than twelve months. The revised code will take effect from accounting year beginning on or after 1st October 2014

Changes to the code cover three main aspects;

i) Going concern: companies are now to include a statement on whether the company will continue to be in operation for a specified time which they are to determine. Such set time must be backed with reasons taking into account the risk and uncertainties

faced by the company. The viability statement can be placed anywhere in the reports but if it is placed in the strategic reports, directors will be covered by the 'safe harbour provisions of the Companies Act 2006 (safe harbour means that directors will not be held liable for any loss that occurs from relying on the statement, provided such statement was not intentionally made).

ii) Remuneration: the code stressed the need for remuneration committees to design remuneration policies to align with the long-term success of the company. There should be an arrangement in place to recover or withhold aspects of variable pay when necessary.

iii) Shareholder engagement: when there is a significant vote against a resolution, companies are to provide explanations when publishing general meeting results on how they hope to engage with shareholders and the actions they intend to take.

In addition to the above changes, the FRC stressed the need for constructive and challenging dialogue on the board, that a good way to achieve this is through diversity on the board both in gender and in race. It also recommends the need for the board to lead by example to encourage good behaviours throughout the company.

Corporate governance in the UK has evolved and is still evolving taking into account events in the economic environment around the world. The various codes issued is motivated by the need to sustain good governance practices of companies in the UK and more recently to restore investors' confidence given recent financial crises. Most of the codes operate on the 'comply or explain' principle where a company has to comply with the code and state that it has done so or if it has not, it should give reasons for non-compliance. This will enable investors to judge the motives of the company. The 'comply or explain' approach makes it flexible for firms to justify their use of similar principles which it deems better for its company as one size may not fit all.

2.3 Executive Remuneration in the UK

A huge number of researches done on executive pay have focused on the US companies. This is due to availability and ease of access to pay data and more comprehensive database. Also, the US regulatory authorities have always required more detailed information on executive pay, but in the UK, this is only being required by the Greenbury in 1995 and Directors' Remuneration Report Regulation (DRRR) in 2002 and 2013. However, the recent financial crisis which was attributed to exorbitant pay and the introduction of DRRR 2002 saw an increase in the publication of UK based studies.

Prior to the Greenbury report in 1995, the regulatory framework for executive remuneration in the UK was based on the provisions set out by the Companies Act which requires the disclosure of the aggregate amount paid to the chairman and CEO (if they are separate persons) and other director's pay are presented in a tabular form in bands of £5000, there was no disclosure of performance related pay received (Main et al, 2008). As a result of several corporate failures and poor firm performance with increasing executive pay, shareholders and stakeholders began to call for increased transparency and disclosure in executive pay including the basis of such pay.

In response to the growing concerns of shareholders and stakeholders of public companies about the pay and remuneration of executives, the Confederation of British Industry (CBI) set up a study group in 1995 chaired by Sir Richard Greenbury then chairman of Marks and Spencer Plc. The main focus of the group was to "identify good practice in determining directors' remuneration and prepare a code of such practice for use in UK Plc", Greenbury report (1995). To achieve this, the report recommends the setting up of a board sub-committee known as the remuneration committee.

The Greenbury report (1995) requires that all public company set up a remuneration sub-committee which is made up of non-executive directors who have no personal financial interest

in the company and are not involved in the day to day running of the business of the company. Such persons should also have the expertise in carrying out the responsibility of pay setting. The specific duties of the committee include; i) to provide a remuneration package(s) that is necessary to attract, retain and motivate directors of the quality required, but should avoid paying more than necessary for the purpose. ii) to prepare an annual remuneration committee report to be presented to shareholders in a section of the annual report. The committee's report should disclose the company's policy on remuneration and actual remuneration package of every director by name.

Despite the recommendations of the Greenbury (1995) report, the public and shareholders, as well as stakeholders in the companies, were still not satisfied with the level of disclosure of remuneration. In June 1999, the Department of Trade and Industry (DTI) invited consultation over various issues relating to directors' remuneration, the main issue of concern being disclosure. After two years of extensive consultations, based on the findings and the recommendation of DTI, in August 2002, the Director's Remuneration Report Regulation (DRRR) was published. All companies with financial year ending after August are expected to comply with the requirement. The main focus being enhanced transparency, improved accountability and effective performance linkage of directors' remuneration. The main requirement of the regulation is that companies prepare a special report to be presented to shareholders at the annual general meeting. This should be approved by the board and signed by a member of the board or the company's secretary on behalf of the board. If not signed, then the company and every director involved are deemed to be guilty of an offence and are liable to pay a fine. Other requirement includes full disclosure of the company's policy on remuneration as well as the performance criteria used in determining variable pay, the disclosure of individual amounts paid to each director as well as differentiation between fixed and variable compensation.

Also, details of information on any service contract(s) and a graphical presentation of shareholders return should be made. A significant point of departure from previous requirements is the increased power of shareholders as the regulation requires that shareholders must accept and approve the provisions of the report by an ordinary resolution before it can be enforced.

To further strengthen the regulatory framework for directors pay, the Department for Business Innovation and Skills (BIS) published a proposal in June 2012 for the reform of disclosure and corporate governance framework for executive remuneration in UK quoted companies. After wide consultation, the new reporting regulation was published in March 2013 and enforcement to begin in October 2013. The new regulation requires the directors' remuneration report be divided into two main parts; the first part being a futuristic remuneration policy report to be approved by the shareholder every three years, and the second part is an implementation report stating how the remuneration policy is implemented which is subject to an annual advisory vote. A significant aspect of this policy is that it is subject to shareholders binding vote so that it becomes impossible for companies to make any form of payment to directors without shareholders' approval. The company and any director in breach of this policy are held liable.

Another aspect of this regulation is the disclosure of executive remuneration as a "single figure". This will help unmask the difficulties associated with calculating executive compensation for comparing and analysis purpose. This "single figure" should be disclosed in a tabular format where each amount received or to be received are written in a single column under the headings, salaries and fees, benefits in kind, short-term performance related remuneration such as bonuses, long-term performance related remuneration and pension benefits. In addition, there should be a column for any other item that is remuneration related. Other items addressed by the new regulation are; the disclosure of any amount paid for loss of office with an adequate explanation of how the figure was reached. Although there is an existing requirement for a graphical

presentation of total shareholders return, the new regulation requires for the first instance a five year graphical presentation for the CEO of the single total figure of remuneration earned, percentage change in the remuneration of the CEO, relative importance of spend on pay, statement of remuneration policy in the following financial year, consideration by the directors of matters relating to directors' remuneration and a statement of voting at general meeting.

2.4 Risk Aversion, Background Risk and Executive compensation

A large number of studies focusing on managerial risk taking have failed to properly define what excessive risk taking is. A proper understanding of this concept will go a long way in determining what can be called risk and to judge if and when it is appropriate. March and Shapira (1987) suggest that in defining risk, emphasis should be placed on the degree of uncertainty, the probability and the ability to quantify the outcomes. Some researchers have, however, used the term risk to also mean uncertainty. The distinction is however made by Knight (1921) who defines uncertainty as a situation in which the results from an action are unknown and, therefore, cannot be assigned probabilities while risk is a situation where various possible probable outcomes are known. Sanders and Hambrik (2007) define risk as "the degree to which potential outcome associated with a decision are consequential, vary widely and include the possibility of extreme loss". In defining corporate risk, Wright et al. (1996) suggest that it is "the analysis and selection of projects that have varying uncertainties associated with their expected outcomes. Pratt (1964) presents risk as the variance or standard deviation of returns on an asset.

To understand risk aversion, it is important to begin with the Expected Utility Theory (EUT)[7] and its assumptions and how it comes to play in decision making. EUT deals with how investors make decisions given various possible alternatives. Its three main assumptions are;

1) *Consistency of choice*: this means that investors will always prefer more to less. In the context of CEO wealth, the CEO will always prefer alternatives that will lead to more wealth. Therefore, if utility increases as wealth increases, the first derivative of utility *(u)* with respect to wealth *(w)* is said to be positive.

Stating it mathematically; $u'(w) > 0$

Where u is utility, w is wealth and the prime represents the first derivative.

2) *Risk Preference*: this assumption proposes three states of risk preference; risk aversion, risk neutral and risk seeking.
   - Risk Aversion: an investor is risk averse if he prefers an investment with a certain return to an investment with higher return but greater uncertainty.

     Therefore, the second derivative of utility with respect to wealth is negative or less than zero. Thus;

     $u''(w) < 0$, where the primes represent the second derivative.
   - Risk neutral: for a risk neutral investor, he is indifferent about the return of two investments. He is neither risk averse nor risk seeking. Here the second derivative of utility with respect to wealth is equal to zero.

     Thus, $u''(w) = 0$

     Where *u* is utility, *w* is wealth and the prime represents the second derivative

[7] EUT has been criticized by Rabin (2000)

- Risk seeking: for the risk seeking investor, he prefers an investment with a greater return and greater uncertainty to an investment with a lower certain return. The utility function is characterised by a positive second derivative.

  Thus, $u''(w) > 0$

3) The third assumption relates to investors attitude to risk given changes in wealth. This brings about the term absolute risk aversion. Arrow (1965) and Pratt (1964) developed the founding work on risk aversion which is associated to the Von Neumann-Morgenstern utility function. Pratt (1964) suggests that to measure an investor's risk aversion, it is important to establish the behaviour of the risk premium *(π)*. The risk premium is the amount the investor would pay in order to get rid of the risk. This is equal to the amount that would make the investor indifferent between accepting the risk and the certainty equivalent so that the higher the risk premium, the more risk averse the investor is. The risk premium is given by;

$$\pi = -\frac{\sigma^2}{2} \cdot \frac{u''(w)}{u\prime(w)}$$

Where, $\frac{1}{2}\sigma^2$ is a constant term and,

$-\frac{u''(w)}{u'(w)} = A(w)$, is absolute risk aversion defined as the situation where an investor dislikes risk and its associated uncertainty (Pratt, 1964).

For example, from the above analysis, in the case of a CEO, the risk premium is the amount of wealth that is enough to compensate him for taking risk. Confronted with the decision on risky investment 'r', a CEO with a given amount of wealth say 'x' and a utility function 'u', the risk premium is determined by the level of wealth and the risk to be taken.

2.4.1 Variants of Risk Aversion

The premium placed on risk by an individual investor as risk increases or decreases has been divided into three forms. Pratt (1964) presents these three variants of risk aversion;

- Increasing absolute risk aversion (IARA)
- Constant absolute risk aversion (CARA)
- Decreasing absolute risk aversion (DARA)

An investor is said to exhibit IARA when an increase in wealth leads to a reduction in the amount invested in risky assets. Risk aversion increases as wealth increases.

Here, IARA is defined as; $A'(w) > 0$

An investor exhibits CARA when there is no change in the amount invested in risky assets as the level of wealth increases. There is no change in risk aversion at higher levels of wealth.

Therefore, CARA is defined as; $A'(w) = 0$

Lastly, DARA is characterised by an increase in the amount invested in the risky asset as the level of wealth increases. Risk aversion decreases as wealth increases.

Hence, DARA is defined as; $A'(w) < 0$

2.4.2 Risk Aversion and Background Risk

In making investment decisions, rational individuals are often faced with multiple sources of risk considering the varying degree of uncertainty associated with investment decisions. Examples of these risks include; labour income uncertainty, human capital risk, health risk, committed investment risk and job tenure. These risks may not necessarily be dependent on each other, but the possibility of another risk given that one is present can affect the degree of risk aversion. Pratt (1988, p. 395) clearly points to this fact stating clearly that;

> "Most real decision-makers, unlike those portrayed in our popular texts and theories, confront several uncertainties simultaneously. They must make decisions about some risks when others have been committed to but not resolved. Even when a decision is to be made about only one risk, the presence of others in the background complicates matters."

Various studies have attempted to define background risk as well as differentiate between two types of background risks. Franke, Stapleton and Subrahmanyam (2004) define background risk as any risk that cannot be hedged and is non-tradable such as; risk of labour income and production losses. Tsetlin and Winkler (2005) refer to background risk as any exogenous risk or uncertainty that impacts the final wealth of the decision maker. This they differentiate from 'project risk' which is the risk associated with a project under consideration. Similarly, Lin and Lu (2012) define background risk as "the uncertainty that affects an investor's wealth level but cannot be hedged in the financial market", but notes that some kind of background risk can be transferred through the purchase of insurance. Hence, Alghalith (2012) suggests that an individual is faced with two types of risk; main risk (which is endogenous) and background risk (exogenous) which cannot be insured.

Like the rational individual, CEOs (agents) are faced already with an inherent risk in their portfolio given their undiversified nature and the sensitivity of their wealth portfolio of stocks and options to the volatility of stock prices and stock return. This sensitivity which can either increase or reduce risk aversion can be further aggravated by the introduction of an additional background risk. Pioneer literature on the influence of background risk and risk aversion recognised conditions in which the utility functions of agents or individuals can be shaped by the presence of background risk and risk aversion. In an extensive study of background risk, Gollier (2001) notes that a standard condition for increased risk aversion in the presence of background

risk is that the utility function is concave and exhibits DARA. Eekhoudt, Gollier and Schlesinger (1995) examine in a comparative static setting a risk averse newsboy who must order an optimal amount of newspaper given changes in the demand risk, cost and selling price. In the context of background risk, they show that the addition of an independent background risk can increase the riskiness of newspaper demand and will cause a change in the optimal newspaper order for the risk averse newsboy. Eekhoudt et al (1995) conclude that the addition of a background risk will decrease the optimal newspaper order whenever the newsboy exhibits DARA. Similarly, Li (2011) studies the demand for risky assets in the presence of two risks; a financial risk and a background risk which may or may not be financial and cannot be hedged. They show that the demand for a positive risky asset depends on two terms; the direct effect of the risk premium and the degree of dependence of the two risks. This has also been supported by Eichner and Wagener (2012). Using a mean-variance framework, Eichner and Wagener (2012) study the tempering effect of dependent background risk on portfolio selection. They find that to arrive at an optimal portfolio in the presence of background risk depends on the strength and sign of the correlation coefficient with the endogenous risk. In the agricultural setting, Herberich and List (2012) observe that farmers are more risk averse than students (who carry out experiments in the laboratory) in the sense that farmers are exposed to real life background risk such as unfavourable weather conditions.

Pratt and Zeckhauser (1987) introduced the concept of proper risk aversion which is a situation where an independent undesirable risk cannot be made desirable given the existence of an undesirable risk. This is because the new risk will increase the level of risk aversion even if they are independent. Closely related to proper risk aversion is the concept of standard risk aversion where an “undesirable risk increases an agent's sensitivity to independent risks whenever a non-random wealth occurs” (Kimball, 1993). Hence faced with an existing risk, an agent would be

less willing to accommodate another independent risk. Kimball asserts that the necessary and sufficient condition for standard risk aversion requires a function that exhibits decreasing absolute risk aversion and decreasing absolute prudence[8]. Kimball (1992) developed the concept of Temperance[9] which is the desire to totally reduce risk exposure to an endogenous risk in the presence of an increasing exogenous risk. Kimball refers to this as the degree of moderation in accepting risks an agent faces. Jokung (2008) further developed the concept of quintessence[10] also known as the coefficient of risk apportionment by Eeckhoudt and Schlesinger (2006). Here, the coefficient of absolute temperance decreases with wealth. An agent is said to exhibit quintessence when the fifth derivative of his utility function is positive.

2.4.3 Additive Background Risk[11]

Having examined the concept of background risk in the previous section, this section examines a type of background that is additive. Jokung (2013) defines background risk as additive if it adds to final wealth with the resulting effect of an increase in precautionary savings, for example, human capital risk. Gollier and Pratt (1996) provide necessary and sufficient conditions whereby an undesirable or unfair additive background risk leads to more cautious behaviour. This they term 'risk vulnerability'. The term 'undesirable or unfair' means that the introduction of the background risk makes the individual worse off, to the extent that the addition of the unfair background risk increases risk aversion. This will, therefore, make the individual more risk averse in the presence of another independent risk. Crainich, Eeckhoudt and Courtois (2014) show that risk vulnerability can be related to a decreasing downside risk aversion (DDRA). A

[8] Absolute prudence measures the strength of the precautionary savings motive. That is the propensity to prepare and equip oneself in the presence of varying uncertainty, given by $-u'''/u''$ (Kimball, 1990).

[9] Temperance, $T_u^A = -\frac{u''''}{u'''},\ u'''' \leq 0,$

[10] Quintessence, $Q_u^A = -\frac{u'''''}{u''''},\ u''''' \geq 0,$

[11] Jokung (2013) notes that there is multiplicative background risk which has a partial effect on final wealth. Our study is however focused on additive background risk.

necessary and sufficient condition for a background risk to increase risk aversion is a DDRA in the Arrow (1965) and Pratt(1964) sense and DRRA (Decreasing Relative Risk Aversion) in the Ross (1981) sense respectively.

Franke et al (2006) note that one important property of additive background risk is that the background risk being considered leads to a more cautious behaviour when making decisions regarding the primary risk. For example, given the primary or inherent risk faced by executives for holding stock options, any additional risk such as employment risk or tenure can lead to increased risk aversion when making risky strategic decisions that can affect the option portfolio holdings.

An all-inclusive concept of background risk is risk vulnerability by Gollier and Pratt (1996) and Eekhoudt, Gollier and Schlesinger (1996) which is the effect of the addition of a zero-mean background risk on risk aversion. It is a combination of proper and standard risk aversion. While standard risk aversion ensures that both absolute risk aversion and absolute prudence are decreasing in wealth, proper risk aversion ensures that expected utility decreases in the presence of an independent undesirable risk.

Tsetlin and Winkler (2005) consider the effect of correlated additive background risk on optimal investment decision making. Tsetlin and Winkler (2005) suggest that for additive background risk, negative correlation between the project risk and the background risk is advantageous because it increases the certainty equivalent of the risky project. Similarly, Franke et al (2011) show that for a risk averse investor the risk effect dominates the wealth effect so that negative correlation between the project risk and the background risk is preferred. But for the not too risk averse investor, the wealth effect dominates so that a positive correlation is preferred. Similar results were presented by Alghalith (2012) who employed a dynamic investment model to

investigate the impact of correlated background risk on investment decisions. The results of the study reveal that the impact of background risk on optimal portfolio depends on the sign of its correlation with the portfolio risk. They provide evidence that a positive (negative) correlation between the background risk and portfolio risk decreases (increases) the returns on the optimal portfolio.

2.4.4 Risk Aversion and Executive compensation

It is the responsibility of the managers of the firm to take up value maximising risky projects on behalf of shareholders to increase the return on shareholder's investment. The relationship between managers (agents) of the firm and the owners (shareholders) is, however, fraught with conflicts of interest. This is because managers may act in their interest rather than the interest of shareholders. Agency theory suggests that when managers are compensated with part of the firm's stock, thus making them part owners of the firm, they (managers) would carry on the business of the firm as if it were their own. The aim is to motivate managers who may have self-interest and are thought to be risk averse to take up risky positive NPV (Net Present Value) projects to improve firm performance and consequently, shareholder returns. The studies of Guay (1999), DeFusco, Johnson and Zorn (1990), and Agrawal and Mandelker (1987) find a positive relationship between executive compensation and managerial risk taking characterised by an increase in growth options in a firm's assets, an increase in share price variance, an increase in the level of investment and financing decision respectively. More recently, executives have been compensated with stock options which give them the right to purchase a particular amount of the firm's stock at a predetermined price in the future.

The agency theory belief that is premised on making executives part owners of the firm by compensating them (managers) in the form of stocks and stock options to induce risk taking for better returns has been countered by recent studies (Carpenter, 2000). The idea for the use of

stock options is to convexify the concave utility functions of managers so that they become less risk averse, (Defusco et al., 1990; Smith and Stulz, 1985; Sanders, 2001; Haugen and Senbet, 1981). Contrary to the findings of these studies, Carpenter (2000) shows that option compensation does not always lead to risk seeking behaviour. The study analyses the risk attitude of a fund manager compensated with call options on the assets he controls. The findings reveal that the higher the number of options, the more risk averse fund managers become thereby, exhibiting increasing absolute risk aversion. Carpenter (2000), however, notes that options that are deeply out of the money could encourage excessive risk taking. Lewellen (2006), examines the financing decision (in particular, the use of leverage) when managers are risk averse. The study finds that options, particularly if in the money discourage risk taking which is measured by the level of leverage. Lewellen concludes that the magnitude of the incentive provided by stock options depends on managerial risk aversion and outside wealth. Similarly, Lambert, Larcker and Verecchia (1991) show that if there is a high possibility that the options will end up in the money, this could lead to risk aversion, thereby concluding also that the incentive provided by the compensation contract does not always result in risk seeking behaviour. In a related study, Ross (2004) finds "simple, intuitive, necessary and sufficient conditions when the risk preference of an agent depends on the incentive schedule". Ross provides evidence of two more effects aside from the convexity effect (which is the effect of agents option based compensation on risk aversion) that shapes the risk attitude of agents. First, the magnification effect which shows that giving managers more call options to take on more risk further increases or magnifies the sensitivity of the manager's wealth to the stock price. Secondly, the translation effect shows that different levels of wealth can result in different attitudes towards risk which can affect agents risk aversion. Therefore, Ross (2004) asserts that the degree of the relatedness between the firm's share price and the compensation contract can affect agents risk aversion. Following the same

line of thought, Belghitar and Clark (2014) apply Ross (2004) study to a European style option to empirically examine the level of cash holdings maintained by managers as determinants of his risk aversion. They provide evidence that both the convexity and magnification effects reduce managerial risk aversion, but as delta (the sensitivity of managerial compensation to stock price) increases, managerial risk aversion increases.

From the above analysis, it is clear that executive compensation in the form of stocks and option affects the managers' attitude towards risk. Even though Guay (1999) suggests that risk aversion which is a product of non-diversification is the main factor that affects the amount of risk a manager is willing to take, we do not know the effect of background risk on the risk taking behaviour of agents, which may further affect firm performance. The issue to be addressed in subsequent empirical chapters is the effect of introducing an additional risk known as background risk into the compensation and risk taking relationship. In the context of CEOs, this study attempts to find the effect of two types of background risk (employment risk and job tenure) on CEO's risk taking behaviour and subsequent firm performance. For example, the CEO compensation package is such that there is an inherent risk in it due to the close association with the firm's stock price and stock return volatility. CEOs who are faced with the possibility of job loss arising from poor firm performance or short career horizon arising from short tenure (which are classified as background risk adding to the inherent risk), will become more cautious in making decisions regarding risky investment projects, therefore, will exhibit risk aversion as suggested by the background risk theory.

2.5 Theoretical Background of Executive Remuneration

2.5.1 Agency Theory

The origin of Agency Theory can be traced to the book by Adam Smith in 1776 writing on joint stock companies and the problem of separation of ownership and control. He argued that

‘managers of other people’s money cannot be expected to watch over it with the same ‘anxious vigilance’ expected of them as if it were their own, that ‘negligence and profusion’ must always prevail, more or less, in the management of the affairs of such company’ (Smith, 1776). Hence, Berle and Means (1932) advocates for the need to be vigilant and watch the activities of powerful managers who tend to isolate themselves from their shareholders and the society as a whole. Given the rational nature of man, it is assumed that managers will place their interest first before the interest of the owners of the firm (shareholders) resulting in agency cost. As the classic work of Jensen and Meckling (1976) noted that, “…if both parties are utility maximizers, there is a good reason to believe that the agent will not always act in the best interest of the principal”. Shareholders require that managers take up all positive NPV project as well as taking up more risk to increase their return. However, due to the undiversified and risk averse nature managers tend to avoid risky projects to protect their stake in the firm, giving rise to agency cost. To mitigate this cost to shareholders, agency theory advocates for the need to compensate managers/ agents with stocks and stock options of the firm. This way, the agents now become part owners of the firm and would be more likely to act in the best interest of the firm. Agency theory literature Jensen and Meckling (1976) further separates compensation incentives into two strands, behavioural based contract, and the outcome based contract. The behavioural based approach is used in setting up pay structure when there is no information asymmetry and the principal can monitor or observe the behaviour of the agent with minimum cost. A fixed pay structure mostly in the form of salary is given as reward (Eisenhardt, 1989). The outcome-based contract is used when it is not possible or cost effective to observe the behaviour and intents of the principal. The agents’ reward is therefore not fixed but is based on actual or estimated performance. Given that there is a risk in this type of reward system; agents who are risk averse will require a premium to bear such risk, (Jensen and Murphy, 1990).

2.5.2 Managerial Power Theory

The literature (Bebchuck and Fried, 2003) on executive pay have often suggested that the pay executives receive are often not an outcome of optimal contracting. Lambert et al (1993) refer to executive power as the extent to which executives can manipulate pay decisions made by the compensation committee. Managerial power theory argues that executive compensation is not a product of optimal contracting but that executives especially the CEO often exert some degree of influence directly or indirectly on the remuneration committee so that pay packages are borne out of negotiations, (Hengartner, 2006). In fact, a recent study by Bebchuck and Fried (2003) reveal that giving executives incentives to align their interest with those of shareholders to resolve the agency conflict is part of the agency problem.

Managerial power can manifest itself in various forms, for example, the amount of equity owned by the CEO, long-serving CEO, and a CEO that was a former employee of the company or when the CEO is also the chairman of the board. The extent to which the board is independent can also result in a CEO possessing these characteristics to have a strong influence on board decisions, especially regarding compensation. As suggested by Bebchuk and Fried (2004) '... the managerial power approach predicts that compensation packages will be more favourable to managers in firms in which managers have relatively more power'.

2.5.3 Stewardship Theory

In contrast to agency theory, the stewardship theory asserts that managers could be trustworthy people who can and are genuinely able to manage the resources of shareholders at their disposal. Donaldson and Davis (1991) proponents of the stewardship theory propose that for better firm performance, the board of directors should be composed mainly of inside directors as against agency theory that advocates for more outside independent directors. Donaldson and Davis (1991) assert that given the close link between the firm and the managers, in-depth knowledge

about the firm, access to current first-hand information and technical expertise, with commitment to the firm, managers are better informed and are more able to make effective and efficient decisions that would lead to profit maximization and hence increased shareholders wealth. Another perspective of the stewardship theory relates to management psychology. Stewardship theorist Muth and Donaldson (1998) argue that executives care about their reputation and career and would therefore not trade it for immediate self-gratification by indulging in activities that would be of disadvantage to shareholders. In making efforts to properly maximise the resources of shareholders, executives are indirectly managing their own career (Fama, 1980). Stewardship theory also reproves the belief of agency cost that is said to arise from the contractual relationship between management and shareholders. It suggests that given the fact that managers are trustworthy stewards the question of agency cost is avoided as there is no misalignment of interest between managers and owners (Davis et al., 1997).

Whilst agency theory gives emphasis to financial rewards as the main motivator for managers, stewardship theory Muth and Donaldson (1998) emphasises the presence of nonfinancial motivation for managerial behaviour, these include; the need for achievement and recognition, the intrinsic satisfaction of successful performance, respect for authority and the work ethics.

Donaldson and Davis (1991) provide another viable path to the achievement of superior firm performance is the combination of the role of Chairman with the role of Chief Executive Officer (CEO). This is to ensure clarity of purpose, stating that there is no confusion as to who has authority or responsibility for a particular matter. They claim that when the two positions are combined, firms will enjoy the benefits of unity of direction and of strong command and control.

In the light of the above, stewardship theory sees executive compensation as a product of better firm performance which results from managers' genuine natural commitment and diligence to

duty. This is in contrast to agency theory that sees compensation as the reason for commitment and diligence which results in superior firm performance.

2.6 Components of Executive Compensation Package in the UK

The components and structure of the executive compensation package though may vary from firm to firm due to heterogeneity in pay practices; there are however some key components that are same as most firms. The typical compensation package comprises of two main parts. The first part being stable and cash based includes basic salary, bonuses, pensions and other allowances. The second part is mostly variable because it is based on predetermined targets and performance measures. As a result, the value of the compensation received varies from year to year. These include; long-term incentive plans, stock options, restricted stocks. A large portion of these incentive plans are based on pre-determined performance target. Conyon and Murphy (2000) examines the structure of executive compensation and describes it as a complex framework comprising of various elements of incentives including share options and Long Term Incentive Plans (LTIPs) contingent on some performance criteria.

LTIPs have become a common component of many compensation packages serving as a compliment to stock options. In their research, Conyon and Murphy (2000) discovered that as at 1997, one-third of the 200 sampled firms had introduced LTIPs into the compensation scheme.

Given the need for transparency and efficient optimal compensation, legislations have emanated in various countries for the need of a remuneration committee to be set up within the board to determine the compensation structure. Members of this committee rely on information from the firm, outside professionals like compensation consultant and the industry average pay (for such position to determine the basis for and the amount to be paid) to set up the remuneration for an executive position.

2.6.1 Base Salary

Base salary is the cash amount paid to the executive irrespective of the firm performance. Previous studies (Murphy, 1999; Solomon 2007) refers to the base salary as the cash amount that is sufficient to attract the executive for the position. The key determinant of this cash amount is market forces, experience and background of the individual as well as the number of peers in similar positions in the industry. In a survey of 200 UK companies in 1997, Conyon et al (2009) find that base salary accounts for 70% of cash compensation and 54% of total compensation. Base salary is the most constant of the compensation components as it is set for a period of time usually one year and may be reviewed (upward) thereafter. Ezzamel and Watson (1998) in a study of UK firms opined that executives who are paid below the prevailing market rate are more likely to get a review upward, but those who are paid above the prevailing rate are less likely to get a reduction in pay, they termed this "ratcheting up".

The base salary remains an important component of the pay package because it serves as a guarantee to risk-averse executives that a take home is sure. Kim and Nofsinger (2007) opined that executives that are risk averse would rather have a steady increase in base salary than an increase in other pay components which are highly volatile.

2.6.2 Options

Stock options granted to the executives have been the most debated component of the compensation package. It is also the oldest form of long-term incentive scheme, (Greenbury, 1995). Stock options constitute a contract given to the executive that allows them to buy a particular number of shares at a particular price in the future. If the price of the firm's share increases after the vesting period, that means the executive can buy them at a discounted price or can sell the shares profitably. Options, however, cannot be traded or exercised before the vesting date and will be forfeited if the executive leaves the firm before the vesting period. Options have been argued to be the best means of aligning the interest of shareholders with that of agent

thereby improving performance, (see Coles et al, 2006). However, some other studies have found no link between options and a firm's performance. This is because given the undiversified nature of top executives and the volatile nature of stock prices (on which the value of the stock option depends) options may not be the best to motivate managers or align the interest of shareholders with agents (Rogers, (2005). Another reason is that share prices are affected by external forces which are outside the control of management this can adversely affect the stock price and consequently its value.

In the UK, the Greenbury report (1995) on directors' remuneration recommends that all long-term incentive plans including options should be based on "challenging performance criteria". Executives should not be made to benefit from increase in stock price alone which might not result from their effort rather (which could have been a product of the external environment of the firm) the report suggest that the remuneration committee use criteria which are comparable to similar firms in the industry and should reflect the objective of the firm which is to increase total shareholder return.

2.6.3 Annual Bonus:

The bonuses given to executives in the UK is usually made up of cash bonus or fully paid bonus shares or both. This is usually based on some performance target in the financial period. Bonuses are classified as short-term incentives because they are awarded and received within one financial year. Murphy (1999) notes the advantage of bonus is that it is a direct and immediate reward for executive actions which can be seen and does not call for additional risk or obligation.

Bonuses, however, can lead to some problems with risk implications. For example Murphy (1999) suggests that cash bonuses might lead managers to decrease capital investment so that there will be enough funds to give out as bonus since reported profit will be high. Bonuses also

pose a danger of earnings management and financial misreporting since the performance target on which bonuses are paid are often explicitly stated, (Holthausen, Larcker and Sloan, 1995).

2.6.4 Long Term Incentive Plan (LTIPs)

Awarding of stock options alone to executives has been criticised for being a source of sudden windfall gains resulting from general positive stock price movement and not the outcome of extra effort by the executives. The Greenbury report (1995) has recommended that UK companies implement a compensation scheme that is more long term oriented and performance linked. Since the report, many UK companies have adopted LTIPs as a complement to stock options. Indeed, Pepper, Gore, and Crossman (2013) reported that as at 2009 LTIPs constituted of about 38% of the total earnings of FTSE100 firms and 33% for FTSE mid- 250.

Although the rationale for LTIPs is to align the interest of shareholders with managers and to increase firm-specific performance, the structure and criteria for awarding of LTIPs has been called to question because firms may have varying criteria for the award, and executives have been accused of manipulating the plan to the detriment of shareholders, (Buck, Bruce, Main and Udueni, 2003).

On average, LTIPs in the UK comprise of grants of deferred shares that have a minimum vesting period of three years only if some pre-stated performance targets are attained. In the US, executives are granted "restricted" shares that vest over time but do not necessarily have performance criteria attached. US executives are also given multi-year bonuses based on some accounting performance targets, (Conyon and Murphy 2000).

2.7 Determinants of Executive Compensation

What constitutes the amount of pay received by executives and what determines such exorbitant pay remains a puzzling question in corporate governance research. While researchers like Murphy (1986) argue that CEOs' deserve the amount they are being paid, Kerr and Bettis (1987)

argue that there is no rational basis for the huge amount received by top management. The list of determinants of executive pay is unending given the various perspectives it can be addressed from and the peculiar circumstance of the paying firm. This research will briefly examine a few of the most debated determinants since an indebt analysis is beyond the scope of this research.

2.7.1 Size as Determinant of Pay

Firm size has been greatly argued as one of the main drivers of executive remuneration, (see Finkelstein and Hambrick (1990), Lambert, Larcker and Weigelt (1991). A meta-analysis study by Tosi, Warner, Katz and Gomez-Mejia (2000) revealed that firm size accounts for 40% of the variation in CEO pay. In his study, Conyon (1997) noted that firm size is a significant determinant of the level and structure of executive compensation. This is understandably so because larger firms have the resources to attract and retain highly talented executives who knowing their worth require large pay packages to carry out their duties. In addition, the market for highly skilled professionals is competitive so that the highest bidders for such individuals are large firms who are able to meet the cost of hiring such individuals with expertise.

The literature has shown great support for size as a determinant of executive pay which is mostly linked to competitive market forces. For instance Core et al (2003) reports that size is positively related to executive pay which is attributed to high growth opportunities and more complex operations which require highly skilled managers with higher equilibrium wages. Tervio (2008) used the "assignment model" to explain the relationship between size and pay. They assert that size of the firm coupled with heterogeneity in ability in a competitive equilibrium framework determines the level of CEO pay.

Gabix and Landier (2008) examine the link between executive compensation and firm size across time, across firms and across countries. They concluded that recent rise in CEO pay can be explained by the substantial growth in firm size. In particular, they noted that between 1980

and 2003 US CEO pay increased six folds, which they attributed to a matching six-fold increase in large firms (measured by market capitalization). Similarly, Frydman and Saks (2010) find a strong relationship between firm size and pay, judging this to be a result of an upward trend in size and pay rather than a causal effect explanation. Their result did not change when the change in pay and change in firm size were used as variables.

In the UK, Guest (2010) examined a large sample of 1880 UK companies from 1983-2002. They report a positive relationship between board size (large firms consequently have large boards) and the rate of pay increase. Contrary to another argument, Guest suggests that the pay increase is as a result of less efficient decision-making and poor communication system which is associated with large boards. In a related study, Lin, Kuo and Wang (2013) finds statistically positive relationship between firm size and executive compensation. Particularly, they examined a sub- sample of "fat cats" companies (that is companies paying high levels of compensation despite having low levels of performance) their findings reveal that large firms despite having poor performance pay high levels of compensation.

Though Graham, Li, and Qui (2012) report a strong relationship between firm size and pay, they suggest that this relationship is overstated in the literature, because most studies did not control for some omitted variables. They find that there is a drop in the coefficient of 40% when manager fixed effects were included in the model specification.

2.7.2 Firm Performance as a Determinant of Pay

Performance as a determinant of executive pay stems from the incentive alignment perspective of agency theory. Since the principal cannot efficiently monitor the efforts of agents and the presence of information asymmetry, principals are forced to transfer some of the risks to the agent by giving agents incentives that are based on observed outcomes such as firm performance.

Hence, options and bonuses are tied to predetermined performance targets. Logically, it is expected that the efforts exerted by managers in the cause of their duty will manifest in the firm performance. As such high performing firms are expected to give their executive more reward and the reverse for poor performing firms, (Kim et al 2009).

The existing literature on firm performance and executive remuneration has however yielded inconsistent results. Mehran (1995) noted that a reason for this conflicting result is the measure of performance, stating that while some studies use market-based measures, some use accounting based measure resulting in varying correlation results. Core et al (1999) examined the relationship between corporate governance, CEO compensation and firm performance. They find the level of pay to be an increasing function of firm performance. Similarly, in examining 1500 UK public companies, Aggarwal and Samwick (1999) found a positive association between total compensation and performance for top five executives. Similarly, McKnight and Tomkins (1999) found a strong pay-performance relation between executive compensation and total shareholders return for 109 UK companies. They find consistent results when pay was broken down into separate components.

Contrary to these findings, Conyon and Sadler (2001) find a weak relationship between pay and managerial compensation for a sample of 532 executives in the FTSE100 companies. Similarly, Jensen and Murphy (1990) find that there is no association between pay and performance for a sample of US CEOs. Berkema and Gomez-Mejia (1998) suggest that the reason for the weak link between pay and performance can be countered by the use of a general research framework which includes other criteria not often mentioned such as individual characteristics, firm governance structures and contingencies (like level of research and development, growth rate, firm strategy, industry concentration/regulation as well as national culture) can further be used to explain the determinants of executive pay.

2.7.3 Compensation Consultant as Determinant of Pay

The compensation committee which is a sub of the board of directors is saddled with the responsibility of setting the compensation of executives including the CEO. Because the committee in most cases lacks the skills and expertise and necessary information for setting an optimal pay and are often too busy with their full-time jobs in other firms and do not meet regularly, they tend to seek the advice of compensation consultants, (Conyon, Peck and Sadler, 2009). Compensation consultants are firms which specialise in providing necessary advice and information on executive pay practices; they may also provide "other services" to their client firms.

The literature on executive remuneration and the influence of compensation consultant have become a subject of serious debate. While some school of thought believes that these consultants really do assist in setting an optimal pay structure, others believe that they are being used to justify executive pay. The use of compensation consultant became more prominent after the Greenbury report (1995) recommends that the compensation committee can seek the advice of expert third part in the pay-setting process. The DRRR in 2002 further requires public companies to publish detailed information of any third party advice sought including their names and any other services provided. This has led to even more debate on the objectivity of the advice of such consultants especially when they provide additional services.

There is so far inconclusive evidence of the influence of compensation consultant on executive remuneration. One of the earliest studies on the relation between CEO pay and the use of compensation consultant was conducted using survey data by Tosi and Gomez-Mejia (1989). The study suggests that in manager controlled firm, consultants have greater influence on CEO pay than in owner-controlled firms. They suggest that this is due to the fact that CEOs' hire the consultants. Similarly, Goh and Gupta (2010) provide evidence of a positive relationship

between compensation consultant and CEO compensation. They noted that this positive relationship is particularly obvious when firms switched their main consultants, thus providing evidence that companies engage in opinion shopping amongst remuneration consultants in a bid to get a more favourable pay package. The managerial power approach argues that compensation consultants are hired to justify the sub-optimal pay of executives (Bebchuck, Fried and Walker, 2002). This approach suggests that because the consultants are hired either by the committee or the personnel department who tend to be loyal to the CEO, given that they will want to retain their job with the client company, they will give advice on pay that would suit the interest of the CEO. Recent studies reveal that when pay consultants are used CEOs' earn higher pay. For example consistent with the rent extraction theory, Conyon, Peck and Sadler (2009) in a study of the relationship between CEO pay and compensation consultant in the US and the UK find that CEO pay is generally higher for firms that use compensation consultant. They also find that the amount of equity-based pay such as stock options is greater in firms that use compensation consultant, (see also Goh and Gupta,2010; Volgaris et al,2013).

Another argument in the use of compensation consultant as determinants of executive compensation relates to the other/ additional services or "cross-selling" provided. It has been observed that most compensation consultants do not stop at giving advice on pay but offer some additional services like pension plan advice, setting employee pay packages, actuarial and other human resource services which they receive additional payment for. Where this is the case, there is the danger that the consultant would be depending on the client for a large part of its revenue. Given this situation, there is the tendency that the consultant would favour the CEO with generous pay package to retain his job, but to the detriment of shareholders (Padgett, 2011). In a study of US and Canadian firm Murphy and Sandino (2010) find evidence that CEO pay is higher for firms where the consultants provide other services. They also find that pay is even

greater in Canadian firms when the fees paid to the compensation consultant for other services is higher than the fees paid for compensation consulting service. On the contrary, Cadman, Carter and Hillegeist (2010) examine the pay package of 755 firms in the US. The results revealed that "cross-selling" (providing other services other than remuneration advice) does not provide incentive for consultants to engage in bias pay package advice. They do not also find low levels of pay-performance sensitivities among firms with consultants with conflicting interest.

2.8 Conclusion

This chapter provides an overview of the evolution of corporate governance in the UK. It specifically examines the institutional and regulatory framework guiding corporate governance practices amongst UK listed companies with emphasis on the recommendations of each code to date. From the Cadbury report of 1992 to the updated version of the UK corporate governance code in 2014, the UK corporate governance code has seen tremendous change with the hope of establishing a code of best practice for UK companies to prevent future financial crisis.

Going further, the chapter turns its focus on executive remuneration in the UK. The history and development of codes guiding executive remuneration in the UK have moved from a firm based decision but now a function of the remuneration committee which is guided by the corporate governance codes like the Greenbury report 1995 and its subsequent recommendations and subject to shareholders' approval. A notable development is the disclosure of executive compensation as a single figure to unmask the difficulties associated with calculating executive remuneration for comparing and analysing purposes.

Following the above section, the chapter considers some of the underlying theories of executive remuneration. It begins with the agency theory that considers remuneration as the most efficient way to align the interest of shareholders and managers. Next, managerial power theory considers the optimality of executive compensation, suggesting that executive pay is a product of the

degree of power the executive possesses. Lastly, stewardship theory considers other non-financial sources of motivation for the executive as against agency theory that considers only financial motivation for executives.

The last two sections examine the components of executive compensation and the three key determinants of executive pay. Even though there are countless factors that come to play in the decision of the amount to be paid to an executive, firm size, performance and the use of compensation consultants are key determinants of executive compensation.

CHAPTER 3: CEO COMPENSATION AND RISK TAKING IN THE PRESENCE OF BACKGROUND RISK

3.1 Introduction

The relationship between managers (agents) of the firm and the owners (shareholders) is fraught with conflict of interest. This is because managers may sometimes act in their interest rather than in the interest of shareholders. Managers who make the decisions of the firm are considered under-diversified because they have most of their human and capital resources tied to the firm. Due to this under-diversified nature which exposes the manager to firm risk, managers have more incentive to forgo positive NPV projects in favour of less risky projects which may be sub-optimal, therefore resulting in increased agency cost and reduced shareholders return. To make firm value maximising decisions, traditional agency theory suggests that managers be compensated with a portion of the firm's stock so that they become part owners of the firm (Jensen and Meckling, 1976). This can be achieved by giving stocks out rightly to the executives and they become owners of the stock. Another way is through stock options. This gives managers the right to purchase a particular number of stocks at a predetermined price in the future. The aim is to use stock options to convexify the concave utility function of the manager. The idea is based on option pricing theory which suggests that the more volatile an option, the more its value.

This chapter examines the effect of background risk (measured as CEO employment risk and CEO tenure) on the relationship between executive compensation and risk taking behaviour of CEOs in the FTSE-350 index. Existing finance literature (Core et al, 2003; Coles et al, 2006; Carpenter, 2000; Lambert, Larcker & Verecchia, 1991; Lewellen, 2006) have attempted to establish a relationship between compensation and risk taking with inconclusive results. A

potential reason for these inconclusive results is that they may have failed to examine other factors apart from the risk associated with the compensation package that could affect the CEO's risk taking behaviour. In making investment decisions, rational individuals are often faced with multiple sources of risk considering the varying degree of uncertainty associated with the decisions. These risks may not necessarily be dependent on each other, but the possibility of another risk given that one is present can positively or negatively affect the degree of risk aversion. No wonder Pratt (1988) asserts that most investors face multiple uncertainties concurrently such that even after committing to some risk, there is likely some background risk that may affect decision making. Although, Gollier and Pratt (1996) and Eekhoudt, Gollier and Schlesinger (1996) consider the effect of background risk on risk aversion in a conceptual and mathematical setting, where they stated conditions whereby background risk can lead to cautiousness, to my knowledge, there is no study that has applied the concept of background risk on the relationship between compensation and risk taking in an empirical approach.

The aim of this study is therefore to examine the effect of background risk on the relationship between compensation and risk taking, with the hope of resolving the earlier conflicting results from previous studies which only considered the effect of compensation risk on risk taking behaviour. To do this, two types of background risk are examined: CEO employment risk and CEO tenure. Employment risk and tenure are identified as proxies for background risk because the consequence of job loss and retirement is assumed to result in reduced future wealth. Therefore, they may have the potential to increase risk aversion to preserve current wealth. We also focus on two components of the compensation package; the CEO stock compensation including options and CEO cash compensation. Stock compensation in the form of options have been shown to be the largest part of the variable compensation and cash compensation has been argued to be a source of wealth diversification. Although some literature (Sanders and Hambrick,

2007) suggests that CEO options lead to more risk taking, we do not know what happens when the CEO faces potential job loss. Is he likely to care about the risk in the compensation package or the fact that he may soon lose his job? Or if the CEO is nearing retirement, what will happen to his risk appetite given that there is an inherent risk associated with the compensation package?

Following from the above, this chapter attempts to make three key contributions. Firstly, to examine a complementary theory that combines the assumptions of agency theory, to provide new evidence on the relationship between executive compensation and risk taking on one hand, and background risk and risk taking behaviour on the other hand. Secondly, unlike previous studies that have examined the direct link between compensation and risk taking behaviour, this study emphasises the need to consider the background risk confronting the CEO. This is achieved by examining the indirect effect of risk aversion on the relationship between compensation and risk taking behaviour. Thirdly, the chapter aims to contribute to the background risk theory, by providing empirical evidence of the effect of background risk on CEOs risk taking behaviour as oppose to previous background risk studies that have focused on individual risk taking behaviour.

In order to examine the joint effect of compensation risk and background risk on risk taking behaviour, we first employ a fixed effect regression which controls for unobserved heterogeneity in the sampled firms. As a further test and because fixed effect does not control for simultaneity, the dynamic panel GMM estimation method is employed which controls for endogeneity and simultaneity in the models.

The chapter is, therefore, organised as follows; after this introductory section, the next section discusses the related literature, this is immediately followed by the hypotheses development section, 3.3. After which section 3.4 examines the measures of risk taking. Thereafter, section

3.5 discusses the research design. Sections 3.6 & 3.7 presents the descriptive statistics and correlation analysis respectively. Section 3.8 presents the empirical result and analysis. The penultimate section 3.9 presents' further robustness tests, while the last section, 3.10 concludes the chapter with policy recommendations.

3.2 Related Literature

3.2.1 CEO Delta and Risk Taking

As noted in the previous chapter, executive pay packages are comprised of both fixed and variable pay. This study, however, focuses on the two components, CEO delta and CEO cash compensation. Some studies Ozkan (2007), Gregg et al (2005) employ one or a combination of the following variables such as the number of stock options granted, the value of options held, or estimated value of exercised options as independent variables. These measures have been termed 'noisy proxies' as they do not properly reflect the exact nature and incentive properties of the equity compensation components, (Core and Guay, 2002; Coles et al, 2006). Hence, Guay (1999) suggests examining the incentive properties of the equity compensation package by focusing on the sensitivity of the value of the firm based wealth to the underlying stock price (termed delta) and its volatility (termed Vega). Guay notes also that both Delta and Vega are highly likely to affect the agents risk taking behaviour. In this research, we examine delta and cash compensation as the independent variables determining risk taking behaviour. The reason for examining the delta of the compensation package is that this is directly related to the firm's stock price. A firm's stock price is one of the key measures of performance readily available to stakeholders and as such managers are expected to engage in strategic decisions that will improve the share price. Coles et al (2006) however note that, because managers share gains and losses with shareholders, higher delta could serve to align the interest of shareholder and managers, thus encouraging managers to work effectively and efficiently. Similarly, Belghitar and Clark (2015)

find that higher delta has a significant negative effect on agency cost. They argue that when managers are exposed to the risk in firm's stock price, they tend to make more value maximising decisions hence reduced agency cost.

The effects of delta and vega on managerial decisions have been relatively studied with mixed results. For example, Armstrong (2007) finds a positive relation between delta and future investment in research and development. Coles et al. (2006) provide evidence of a strong significant relationship between the structure of managerial compensation and both investment and debt policies. In particular, the study finds that higher sensitivity of CEO wealth to stock return volatility leads to riskier investment policies in R&D, more focus, and higher leverage. Coles et al. (2006) however do not consider the utility function of the CEO which can affect risk aversion. If the CEO is sufficiently risk averse, higher Vega might not necessarily lead to more risk taking (Ross, 2004). Benson, Park and Davidson (2014) finds evidence of a negative relationship between vega and post-merger equity risk. They observed that the effect is prominent in CEOs with higher proportions of options in their compensation package especially options that are in the money. Similarly, the findings of Guay (1999) suggest that there is a positive relation between Vega and a firm's investment in R&D intensity, firm size and investment opportunities. Using a two-stage regression model, Core and Guay (2002) finds a positive relationship between CEO delta and growth opportunities. Cohen et al (2000) report a positive association between vega and risk taking. The results of the study reveal that executives with more options and options that are highly sensitive to the volatility of stock returns tend to increase leverage in response to this sensitivity. Although the study controls for CEO and firm characteristics including firm and year fixed effects, the influence of delta was omitted. In response to the Delaware takeover regime in the 1990s, Low (2009) examined how equity based compensation affects managerial risk taking behaviour. Though the study finds no conclusive

result as to the effect of delta on risk taking, the results suggest that CEOs respond to the takeover protection by reducing firm risk. In response to the takeover protection law, firms increased the CEO vega gradually which resulted in more risk taking behaviour. Smith and Stulz (1985) and Knof, Nam and Thornton (2002) suggest that the sensitivity of the manager's wealth to stock price leads to increased hedging activity while high vega leads to less hedging activities. Rajgopal and Shelvin (2002) examines the effect of both vega and delta on hedging activities in the oil and gas industry and finds similar results as Knof et al (2002). Using financial misreporting as a special case of risk taking, some studies argue that managerial compensation that is highly sensitive to stock price (delta) provides an incentive for misreporting. But when the degree of risk aversion is considered, delta may provide two off-setting effects, a positive 'reward effect' and a negative 'risk effect', vega, on the other hand, leads to a positive incentive effect, (Armstrong, Larcker, Ormazbal and Taylor, 2013). Indeed, the studies of Armstrong et al (2013) analyses the relation between equity incentives and misreporting which they measure by; discretionary accruals, restatements and end enforcement actions. The study provides strong evidence supporting a positive relationship between vega and financial misreporting and that this positive effect far exceeds the incentive provided by delta. They conclude that if equity portfolio makes managers less risk averse, then there is a strong incentive for misreporting.

In the case of cash holding Chava and Purnanandam (2010) show that CEO delta has a positive significant effect on cash holdings while Vega has a negative effect on cash holdings. Tong (2010) finds that the CEO with higher Vega and delta hold less cash, thus suggesting that both delta and vega are risk inducing. In a similar study, Belghitar and Clark (2014) examines the level of cash holdings maintained by managers as determinants of his risk aversion. They provide evidence that both the convexity and magnification effects result in lower managerial risk aversion, but as delta increases, managerial risk aversion increases.

3.2.2. CEO Cash Compensation and Risk Taking

The previous section examines executive compensation delta that is directly related to firm performance or firm risk. The executive compensation package is usually divided into fixed and variable pay, delta examines the effect of the variable pay component on risk taking while cash compensation examines the fixed component of compensation on risk taking. Cash compensation as a fixed component has no direct sensitivity on firm performance but can affect risk taking decision indirectly, (Shaw and Zhang; 2010). Prior studies (Belkhir and Boubaker; 2013, Guay; 1999) have used cash compensation as a measure of portfolio diversification of the executive. It is assumed that a greater amount of cash compensation enables executives to put their wealth in investments that are not related to the firm risk and are therefore more inclined to engage in risk taking activities. Belkhir and Boubaker (2013) suggest that cash compensation could be used as a proxy for the degree of risk aversion of the manager. In a study of US bank holding companies, Belkhir and Boubaker find that CEO cash compensation is negatively related to the use of derivatives. Rajgopal and Shelvin (2002) find a positive relationship between cash compensation and executive stock option risk incentives. They suggest that CEOs that are exposed to high firm risk are compensated more with cash compensation which leads to greater exploration risk. Guay (1999) assert that CEOs' with more cash compensation are less risk averse because they are more diversified to invest outside the firm.

In relation to performance, Ozkan (2007) in a study of UK firms finds a positive relationship between CEO cash compensation and firm performance. Matolcsy (2000) finds that the relationship between cash compensation and firm performance is different for both periods of economic downturn and economic growth. While the study finds no relationship in times of economic downturn, a significant positive relationship is observed between cash compensation and firm performance during periods of economic growth.

Contrary to the above studies, Berger, Ofek and Yermack (1997) view greater cash compensation as a measure of entrenchment to the extent that higher cash compensation leads to entrenchment and reduced risk taking. Similarly, Belghitar and Clark (2014) find a positive relationship between cash compensation and firm cash holding suggesting increased agency cost for firms with CEOs having higher cash compensation.

3.3 Hypothesis Development

3.3.1 Employment Risk as Background Risk

The relationship between the compensation of top executives and risk taking has been widely explored. While there is a lack of consensus as regards the direction of the influences, previous research (Coles et. al., 2006) may have failed to consider the influence of other background risks that could affect the strategic decisions made by the executives. Employment risk which is the probability of a CEO losing his job before the expiration of his contract is of great concern to the CEO. Hence, it can be regarded as a potential background risk that could either lead to more or lower risk aversion depending on the reference point of the CEO. The job of the CEO has become riskier in recent times as employment contracts are now mostly for one year as against three to five years in the early nineties (BIS, 2011). The probability and actual termination or dismissal of the CEO's employment contract can result in two main consequences; loss of current and future income and loss of reputation which can hamper future job prospects. Empirical studies on the reasons for actual CEO turnover or dismissal has attributed it to bad market performance, continued poor firm performance, takeover bid or bankruptcy, (Jenter and Kanaan, 2015; Kaplan and Mitton, 2012; Jenter and Lewellen, 2010; Brickley, 2003). The likelihood of termination can also be attributed to the sensitivity of pay to performance, age, stock ownership, the tenure of the CEO, composition of the board and the homogeneity of the firms' industry, (Hartzell, 1998).

The effect of background risk on decision making has been found to affect individuals as well as households including agents. Guiso and Paiella (2008) study the effect of wealth on risk aversion in the presence of background risk of households in Italy. They assert that households who are more likely to face income uncertainty or become liquidity constrained exhibit a higher degree of absolute risk aversion. The study concludes that absolute risk tolerance (the ability to bear risk as against risk aversion which is the dislike of risk) is an increasing function of consumers' resources, therefore exhibiting DARA. Heaton and Lucas (2000) explore the effect of background risk on portfolio choices. The findings reveal that differences in labour income, proprietary business risk, as well as ownership of employers' stock, affects the amount of wealth invested in risky assets (stocks). Further investigation discovers that household with high ownership levels of their employer's stock tends to invest only a small amount of their investable funds in stocks generally. Thus, pointing to the fact that the presence of an existing background risk can make the investor less willing to take up additional risk. Heaton and Lucas (2000) also find that the degree of exposure to background risk affects the level of risk aversion. This can also imply that a CEO faced with greater employment risk will be less willing to take up highly risky investment projects.

Parrino (1997) in a study of the likelihood of forced and voluntary turnover suggest that CEO turnover increases with industry homogeneity and the availability of capable successor. Bushman, Dai and Wang (2010) provide empirical evidence on CEO turnover and risk. By decomposing risk into idiosyncratic and systematic risk, the findings suggest that the likelihood of CEO termination increases with the level of idiosyncratic risk. They also show that pay-performance sensitivity decreases in the probability of turnover. Cziraki and Xu (2013) examines the effect of employment termination on three risk measures; volatility, beta and idiosyncratic risk. The study provides evidence that higher CEO turnover is associated with low idiosyncratic volatility. This

suggests that risk averse CEOs with a high risk of dismissal are less likely to take up more risk; this is done with the intention to reduce their financial exposure to firm risk. In addition, by utilising net buy as a measure of employment risk from the CEO's perspective, Cziraki and Xu (2013) conclude that CEO's that actively buy shares of their firm are 51% less likely to be dismissed in the coming year. The results show a significant negative effect of turnover probability on risk taking. This suggests that the likelihood of termination increases risk aversion. Kaplan and Minton (2012) assert that the CEO's job is more precarious in recent years. The study examines the effects of two types of turnover; internal and external turnover on stock performance, relative industry performance and relative performance of industry to market. They find a strong and significant relation between internal turnover and the above measures. Furthermore, Kaplan and Minton (2012) find that the increase in turnover and turnover sensitivity in recent years is due to block holdings and board independence. Gao et al (2009), assert that pay cuts are only a short-term substitute for dismissal for CEO's with continued poor firm performance. Gao et al (2009) conclude that a CEO who recently faced a cut in pay and still have more poor firm performance is more likely to be dismissed than a CEO whose pay was not cut. In response to a pay cut, CEOs tend to cut down on R&D, Capital expenditure and leverage. It is safe to conclude therefore, that pay cut can increase the possibility of dismissal which can result in risk aversion. Chakraborty et al (2007) used the term termination risk which is similar to employment risk, this is measured as the Conditional Terminal Propensity (CTP). They hand-collected data on the reasons for CEO turnover for relevant years and estimated the probability of forced termination for each poorly performing CEO, the estimated coefficient is then used as the CTP. The findings suggest that managers in industrial firms faced with high threats to employment take less risky investment decision than managers with low threats to employment. Martin et al (2013) empirically provide evidence that CEO vulnerability positively moderates the

negative relation between current wealth and risk taking. That is CEOs faced with high unemployment risk take less risk in order to preserve current wealth. On the other hand, CEO vulnerability increases risk taking when prospective wealth is high. To measure CEO vulnerability, Martin et al (2013) employ a dummy code representing one for three consecutive years of share price decline coinciding with three years decline in ROA. Kempf and Ruenzi (2009) in a study of the portfolio holdings of US equity mutual fund managers, reveal that apart from the incentives provided by the compensation package, managerial risk taking crucially depends on the incentives provided by employment risk. Kempf and Ruenzi (2009) asserts that fund managers with midyear poor performance tend to reduce risk relative to leading managers to prevent possible job loss.

Contrary to these findings, Laraza-Kintana (2007) measures employment risk using a survey of CEO's who were asked specifically if they think they faced threats to their employment. Based on a seven-point scale ranging from strongly agree to strongly disagree, CEOs were asked the question "there were years when I believed my employment security was at risk". The findings reveal a positive relationship between employment risk and risk taking. That is when managers are faced with potential job loss; they tend to take up more risk to improve the performance of the firm. This method of measuring employment risk is, however, cumbersome and can be affected by subjective bias.

From the above analysis, we find that the exposure to employment risk affects risk taking and that the influence of CEO compensation on risk taking given employment risk depends on the exposure to employment risk. Hence, the argument is that with regards to employment risk as background risk, we expect that employment risk will lead to risk aversion. Hence, the following hypothesis is made;

Hypothesis1a: There is a negative relationship between background risk (employment risk) and risk taking behaviours of CEOs

As noted earlier, the influence of CEO delta on risk taking has yielded inconclusive result. While studies like Chava and Purnanandam (2010), Core and Guay (2002), Armstrong (2007) find positive relationship between delta and risk taking, Smith, Stulz(1985) and Knof, Nam and Thornton (2002) find negative relationship. We assume that because increasing the stock price will increase the value of the equity portfolio, CEOs will be willing to engage in profitable risky activities so that there will be an increase in stock price. However when the CEO is faced with an undesirable background risk such as employment risk, delta will result in risk aversion hence reduced risk taking. Stating this argument hypothetically;

Hypothesis 1b: In the presence of background risk (employment risk), there will be a negative relationship between compensation delta and risk taking behaviours of CEOs.

Cash compensation, on the other hand, provides CEOs with the opportunity to diversify their portfolio by investing outside the firm (Guay, 1999), this is expected to lead to more risk taking. For example Ozkan (2007) and Rajgopal & Shelvin (2002) find a positive association between cash compensation and risk taking. Because of the assurance that cash compensation provides, we assume that CEOs facing high employment risk will continue to engage in risk taking activities. The hypothesis therefore is;

Hypothesis 1c: In the presence of employment risk, there will be a positive relationship between cash compensation and risk taking behaviours of CEOs.

3.3.2 CEO Tenure as Background Risk

In applying the same concept of background risk, the number of years a CEO has left to stay in office as well as the number of years in the role as CEO can affect risk taking behaviour. Tenure

is a potential background risk because, when CEOs retire, their source of income reduces, and the amount of risk taken at the later years of retirement can affect future income in the form of options. Gibbons and Murphy (1992) note that as tenure increases, CEO have short employment horizon and are less concerned about incentives related to career, but are more concerned with performance-based incentives. Therefore, compensation that is equity based is less likely to be motivating. This can influence the amount of firm resources spent on risky projects. Several empirical studies have attempted to find a link between a CEO's tenure in office and some firm outcomes, such as firm performance, firm value, compensation and even risk taking, these have yielded inconclusive results. For instance considering divestiture and acquisition as measures of risk taking, Sanders (2001) finds evidence supporting the hypothesis that position tenure moderates the effect of stock options on risk taking. Gibbons and Murphy (1992) show that career concerns have implications for incentives even in the presence of contracts. They show that career concerns loom more for managers with longer years to retirement, thus suggesting that managers are likely to take up more costly actions to increase output. But for an executive with shorter time to retirement, pay-performance sensitivity is of more concern. Zheng (2010) examines the relationship between tenure and CEO compensation. Based on four hypothesis; the study reveals that the portfolio consideration effect and the learning effect are the major effects in explaining the pattern of the compensation structure over CEO tenure. They conclude that the longer a CEO stays in office, the less he gets compensated with equity, also CEO's hired from outside the firm are compensated with more equity because the board is uncertain about his ability. Cremers and Palia (2011) study the link between tenure and CEO pay levels on one hand and pay- performance sensitivity on the other hand. By analysing the predictions of four theories, namely entrenchment, career concern, dynamic contracting and learning on pay levels and pay sensitivity, the study provides evidence of a positive relationship between CEO tenure and CEO

pay, and a positive correlation between CEO tenure and pay-performance sensitivity. The results show consistency with all hypotheses but for the learning hypothesis. Simsek (2007) examines the relationship between CEO tenure and top management team (TMT) risk taking. They find that CEO tenure has a positive effect on the TMT risk taking. This effect is shown to influence performance when pursuing entrepreneurial initiatives. Similarly, Lewellyn and Muller-Khale (2012) in a study of the effects of power on managerial risk taking finds that CEO's power is positively related to excessive risk taking (long tenure is employed as a proxy for power). Their findings indicate that CEO tenure is positively related to top management team (TMT) risk taking. Contrary to these findings, Belghitar and Clark (2012) in a study of the effect of CEO risk appetite on firm volatility in financial firms suggest a negative relationship between CEO tenure and firm volatility. Boeker (1997) examines the influence of CEO and top management team characteristics on strategic change and concludes that CEO with long tenure exhibits less change than short-tenured CEO, thus suggesting risk aversion as tenure increases. They find a negative relationship between tenure and strategic change. Similar results have been revealed in the studies by Charkraborty et al (2007), Coles et al (2006) and Berger et al (1997).

Chen and Zheng (2014) proposes that CEO tenure as it affects risk can be viewed from four dimensions i) that tenure may increase power as CEO stay longer in office, they tend to gain ground, become more assertive and authoritative. This tendency can result in overconfidence which can lead to more risk taking, thus resulting in a positive relationship with risk taking. ii) Increasing tenure makes a manager more undiversified in terms of human and financial capital. This could result in a negative relationship between tenure and risk taking. iii) the more a CEO stays in office, the more experience he garners about the firm. This increased experience and knowledge gained is factored into decision-making process which often results in increased risk taking. iv) CEO tenure can also be related to career concern. Given the information asymmetry

that exists between the board and a new CEO especially for outside CEOs, about his ability, a newly appointed CEO is expected to take up more risky projects to improve firm value and to prove his abilities. Therefore, a negative relationship is expected between tenure and risk taking. In a recent study, Chintrakarn, Jirapon and Tong (2015) explore the effect of powerful CEOs (tenure as a measure of power) on risk taking. The study shows that more powerful CEOs take more risk and less powerful CEOs are more risk averse.

In the light of the above analysis, there is perceived weakness in some of the aforementioned studies. They either try to establish a relationship between tenure and risk taking without considering the risk associated with the compensation package, omitting the obvious reality that in as much as agents are expected to maximise the returns of shareholders, agents seek to also maximise their utility. Another weakness is that previous studies either focus on the number or value of options granted rather than the sensitivity of the options to the underlying stock price or stock return volatility. As stated earlier, CEOs are often faced with multiple risks with varying uncertain future outcomes that they directly or indirectly consider when making strategic decisions. In this light, it is important to consider the effects of tenure as a background risk when examining the relationship between compensation and risk taking, bearing in mind that both the sensitivity of the compensation package to the stock price and the degree of exposure to the background risk (tenure) can influence risk taking. The prediction is that because longer tenured CEO's have accumulated so much of firm based wealth and their human capital is now tied to a particular industry, we expect that tenure will lead to reduced risk taking to avoid loss in current income. As a background risk, it is expected that CEO tenure will result in a negative relationship between compensation (delta and cash compensation) and risk taking. We, therefore, state the following three hypotheses;

Hypothesis 2a: There is a negative relationship between tenure and CEO risk taking behaviours.

Hypothesis 2b: In the presence of background risk (tenure), there will be a negative relationship between compensation delta and CEO risk taking behaviours.

Hypothesis 2c: In the presence of background risk (tenure), there will be a negative relationship between cash compensation and CEO risk taking behaviours.

3.4 Measures of Risk Taking Behaviour

The finance literature has employed various measures of risk taking as proxies for CEO risk taking behaviour. They range from strategic investment to financial policies as well as firm volatility. For example Coles et al (2006) explore the sensitivity of CEO pay to stock prices (Delta) and stock volatility (Vega) on firm investment and financing decisions. They establish that compensation package with high Vega implements riskier policy choices evidenced by higher investment in R&D, more focus as measured by the Herfindahl index and higher leverage. However, there was less impact on the investment on Property Plant and Equipment (PPE). On the other hand, delta reduces the incentive to invest in R&D and Leverage but increases the incentives to invest in capital expenditure. Similarly, Rogers (2002) examines the effect of managerial motives on firm's hedging policies. Using the ratio of vega to delta as a measure of risk taking, the study reveals a negative relationship between the risk taking incentives provided by CEOs portfolios of stocks and options and firms' hedging policies. Guay (1999) utilise three proxies to capture variations in firms investment decisions, i) book to market ratio, ii) R&D expenditure, iii) and the sum of capital expenditure acquisitions. Guay (1999) find that the convexity of the relation between CEO's wealth and stock price is positively related to R&D and investment expenditure, but a negative relationship was observed with the book to market.

Belghitar and Clark (2012) examine the effects of CEO risk appetite on firm's volatility which is used as a proxy for risk taking. Using three measures of firm volatility; Standard deviation of stock returns, systematic and idiosyncratic volatility and Z-score, they find strong evidence supporting the fact that CEO risk taking appetite has an important effect on firm volatility (risk taking) in the banking industry. Such measure of risk taking has the possibility of being affected by factors beyond CEO efforts. Similarly, Cheng and Zheng (2014) employ the volatility of stock returns as a measure of risk taking in a study of CEO tenure and risk taking. They further decomposed volatility into systematic and unsystematic components. The evidence suggests that there is a positive relationship between CEO tenure and risk taking. Also, in a related study, Chen et al. (2006) examine the effect of option-based compensation on risk taking in the banking industry. Using four market-based measure of risk taking; total risk, idiosyncratic risk, systematic risk and interest rate risk, the findings of the study reveal that the structure of executive compensation provides motivation for risk taking in banks. Gao, Harford and Li (2012), examine the incentive effect of extreme CEO pay cut on risk taking. The results show that pay cut leads to less risky decisions. This is observed by a reduction in capital expenditure, R&D and reallocation of funds to reduce leverage; these were regarded as measures of risk taking.

Denvers, Wiseman and Arrfelt (2008) analyse the influence of CEO equity based compensation on risk taking by firms' managers. The amount of R&D spending, capital expenditure and long-term debt is employed to measure risk taking. The findings of the study show that low values of exercisable options reduce risk taking but the value of unexercised options increases risk taking while restricted stocks, on the other hand, exhibits a negative association with risk taking. Larraza-Kintana et al. (2007) examine various risks bearing attitudes of managers on risk taking. To measure risk taking, they conducted interviews asking CEOs the factors they consider as

capturing strategic risk from the CEOs point of view. Based on the degree of usage and riskiness Larraza-Kintana et al. (2007) develop a composite measure of strategic risk taking which includes seven variables; acquisition of unrelated business, entry into new market, downsizing through layoffs, capital investment, long-term debt, advertising, innovation of an existing product, manufacturing process innovation and research and development were considered risky investment in descending order. The findings reveal that high unemployment risk increases risk taking contrary to the findings in the literature. The study also finds that stock option is negatively associated with risk taking. Sanders (2001) examine the effects of stock ownership and stock options on firms' acquisition and divestiture propensity, stating that by nature acquisition and divestiture are risky ventures because they often result in significant variance in returns. Sanders (2001) also notes that CEOs compensated with more stock options are more likely to engage in acquisition activities, but less acquisition is carried out when compensated with more stocks. This method of strategic choice as a measure of risk taking could be biased as focusing on one investment activity to measure risk taking may not appropriately determine the risk profile of a CEO. Such results derived cannot be generalised. Again such activities do not occur as frequently as other risky choices like R&D, taking huge long-term debt, and capital expenditure.

Taking a different approach, Sanders and Hambrick (2007) unpacked the concept of risk taking into three elements; the size of the outlay, the variance of potential outcome and the likelihood of extreme loss. R&D, capital expenditure and acquisitions were utilised as proxies for risk taking. They find that the more CEOs were paid with stock options, the more aggressively they engage in R&D, capital expenditure and acquisitions but the outcomes usually resulted in extreme firm performance; big wins or big losses, but big losses were frequent.

Lewellyn and Muller-Kahle (2012) examine the effects of CEO power on managerial risk taking measured by subprime lending specialist. They suggest that CEO with more power represented by tenure, age, structural expert and prestige power are more likely to engage in subprime lending. This measure of risk is, however, subjective as the subprime lending involves a series of other activities which could have been omitted in the analysis.

For the purpose of this study, the three most commonly used variables (R&D, Capital Expenditure and Long-term debt) employed in the finance and management literature are utilised as proxies for CEO risk taking behaviour. This is done for two reasons; firstly, it will enable reasonable comparison of results obtained with previous studies. Secondly, unlike stock return volatility and other measures that can be affected by factors beyond the CEO's power (for example; general economic downturn), the decision to take up R&D, Capital expenditure and more Long term debt are firm specific decisions made by the CEO and top executives and are easily observable.

To obtain our measure of risk taking, factor analysis is run using the aforementioned commonly used risk taking variable; R&D, Capital Expenditure and Long-term debt to generate a composite single factor representing the dependent variable as the indicator for risk taking. Each variable was taken from DataStream and defined as follows; R&D represents the annual expenses on the creation and development of new processes, techniques, applications and products with commercial possibilities. Capital expenditure represents the funds used to acquire fixed assets other than those associated with acquisitions. Long-term debt represents all interest bearing financial obligations, excluding amounts due within one year.

The factor analysis reports an eigenvalue of 1.26 and shows that the three variables explain 78.9% of the unobservable variable (risk taking behaviour) with a factor loading of 0.61 for Research &

Development, 0.74 for Long-term Debt, and 0.71 for Capital Expenditure. The results indicate that these three variables can be grouped into one composite variable to represent risk taking. Consequently, a single variable is generated as a standardised factor score from the three variables to form our risk taking variable. In line with the studies of Martin et al (2013) and Denvers et al (2008), the three variables are unscaled to avoid capturing the effect of size on these variables given the high correlation between firm size and the variables, instead firm size is controlled for in the model using market capitalization.

3.5 Research Design

3.5.1 Data and Sample Selection

The data sample consists of firms making up the FTSE 350 index from 1997-2010 with the exclusion of financial firms. Financial firms are excluded due to the different accounting treatment of revenue and profits for financial firms such as banks, investment trust and insurance companies which are different from other types of companies. Also, such firms have special regulatory requirement like the capital structure with a minimum requirement for operation, therefore, it would be inappropriate to compare decisions made in financial firms such as investment and financing decisions with those of non-financial firms (see Adams and Mehran, 2005; Spong and Sullivan, 2007; Belghitar and Clark, 2012). Another factor used in the data selection criteria is that firms must have at least two consecutive years information in order to determine the CEO employment risk. The FTSE 350 index has been chosen because companies listed in this index comprise of the largest companies on the London Stock Exchange (LSE) based on market capitalization. This study is focused on the CEO of the firm because they have more flexibility than other executives so that their actions or inactions may result in great consequences for the company. The primary responsibility of the CEO is decision making,

setting the strategy of the company and shaping the organisational structure, so they are mostly held accountable for the failure of the firm (Bertrand and Mullainathan, 2003)

Executive compensation data has been extracted from BoardEx. BoarEx is an independent company providing comprehensive information on executive remuneration for companies around the world. Firm specific financial information was extracted from Datastream. Datastream provides current and historical time series data in a ready to use form dating as far back as 1973. Data gathered from these two databases were matched which formed our sample data. Table 3.1 below shows the distribution of the companies by sector. After deleting financial firms, and firms without corresponding BoardEx and Datastream information, the total number of firms in the sample amounted to157 with an unbalanced panel of 1874 firm-year observations. Table 3.2 below shows the variables extracted from the two data sources and their definitions.

Table 3.1:1 Distribution of Firms by Sector.

INDUSTRY	NUMBER OF FIRMS	PERCENTAGE OF ENTIRE SAMPLE
Oil & Gas	9	6
Basic Materials	11	7
Industrials	47	30
Consumer Goods	20	13
Health Care	9	6
Consumer Services	41	26
Telecommunications	4	2
Utilities	4	2
Financials	0	0
Technology	12	8
Total	157	100

Table 3.2: Variable Names, Definition and Source.

Variables		Definition	Source
CEO Delta		CEO Delta is the £ change in CEO firm based wealth for a 1% change in firm stock price. Where firm based wealth includes all equity holdings, unexpired stocks and LTIPs options accumulated and held by the CEO to date. This is measured in thousands.	BoardEx
CEO Cash Comp		This is the sum of all cash based payment received by the CEO in a year. This comprises of; salary, bonuses, pension and any other cash payment.	BoardEx
Employment Risk		This is calculated as a dummy variable indicating 1 for two years consecutive decline in stock price coinciding with two-year decline in ROA and 0 otherwise	Authors Calculation
Employment Risk Measure	**ROA**	This is the ratio of net income to total asset	Datastream
	Stock Price	The value of the stock price as at fiscal year end	Datastream
CEO Tenure		The length of time that the CEO has been in the current role measured in years,	BoardEx
CEO Age		The age of the CEO in years expressed in log.	BoardEx
Total Wealth		This is the sum of equity held, estimated value of options and LTIPs held	BoardEx
Firm Size		Market Capitalization expressed in log	Datastream
Return on Equity (ROE)		This is the ratio of net income to	Datastream

		common equity	
Leverage		The ratio of long-term debt to capital	Datastream
Firm Cash		This is the sum of cash and cash equivalent as at fiscal year end	Datastream
Risk Taking (dependent variable): this is a composite variable generated using factor analysis of three observable items; R&D, Capital expenditure, and Long-term debt.	**Research and Development (R&D)**	This represents all direct and indirect costs related to the creation and development of new processes, techniques, applications and products with commercial possibilities for the year	Datastream
	Capital Expenditure (CAPEx)	This represents the funds used to acquire fixed assets other than those associated with acquisitions.	Datastream
	Long-term Debt (LTD)	This represents all interest bearing financial obligations, excluding amounts due within one year	Datastream

3.5.2 Descriptive Statistics

Table 3.3 represents the summary statistics for the data used in the study. CEO delta has a mean (Standard deviation) of £159,000 (508.6), this suggests that for a 1% increase in stock price, there is an increase in CEO firm based wealth £159,000. On average CEOs in the FTSE 350 index receive cash compensation worth £896,000. For CEO total wealth, the average is £15m with a standard deviation of 50. We observe that CEOs in the sample are on average 52years with the oldest 77years and the youngest 34 years old. As for CEO tenure, on average CEOs in the sample have spent 5.5 years in the role with the longest CEO serving approximately 34years.

3.5.3 Correlation analysis

Table 3.4 reports the correlation matrix of all variables utilised. We observe that there is a strong correlation between firm size and R&D, long-term debt and Capital Expenditure 0.52, 0.65 and

0.80 respectively. This suggests that larger firms engage in risky decisions. Accordingly we find a strong correlation between firm size and cash compensation (0.68) and firm size and total wealth (0.51). The report also shows a significant correlation between CEO delta and Total Wealth (0.61). But there is also a low correlation between CEO delta and R&D (0.094) and long-term debt. There is also little negative correlation between stock price and leverage, (-0.001).

Table 3.3: Summary Statistics.

Variable	Observation	Mean	Std. Dev.	Min	Max
CEO Delta	1823	159.137	508.581	0.000	12881.000
CEO Cash Comp	1874	896.353	704.907	0.000	6100.000
ROA	1855	8.802	9.030	-54.820	75.090
Stock Price	1864	5.947	1.050	0.223	16.696
R&D	1682	8.892	1.757	4.094	15.056
LTD	1642	12.095	2.547	0.693	17.158
CAPEx	1834	10.742	1.993	3.784	16.988
Risk	1580	0.000	0.865	-2.704	2.491
Firm Size	1856	14.032	1.612	9.582	19.180
Leverage	1752	25.052	18.483	0.000	171.440
Firm Cash	1858	11.378	1.852	4.263	16.381
ROE	1773	2.877	1.004	-3.507	8.883
CEO Total Wealth	1823	14.766	49.999	0.013	1288.069
CEO Age	1867	51.799	6.300	34.000	77.000
CEO Tenure	1873	5.481	5.525	0.900	34.400

Note: For variable definitions see Table 3.2.

Table 3.4: Correlation Matrix.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.CEO Delta	1													
2.CEO Cash Comp	0.336	1												
3.ROE	0.139	0.112	1											
4.Stock Price	0.196	0.432	0.211	1										
5.R&D	0.094	0.428	0.061	0.320	1									
6. LTD	0.055	0.426	-0.187	0.248	0.348	1								
7. CAPEx	0.142	0.491	-0.049	0.344	0.394	0.730	1							
8.Firm Size	0.242	0.683	0.126	0.520	0.523	0.649	0.796	1						
9.Firm Cash	0.146	0.498	0.077	0.357	0.447	0.418	0.579	0.623	1					
10.Leverage	-0.047	0.067	-0.175	-0.001	0.076	0.682	0.287	0.112	0.023	1				
11. ROE	0.125	0.123	0.779	0.190	0.064	-0.091	-0.018	0.114	0.093	0.048	1			
12.CEO Total Wealth	0.614	0.533	0.167	0.308	0.221	0.225	0.283	0.506	0.278	-0.006	0.189	1		
13. CEO Age	-0.059	0.102	-0.101	0.101	0.071	0.126	0.120	0.108	0.084	0.027	-0.050	0.040	1	
14. CEO Tenure	0.151	0.058	-0.054	-0.073	-0.089	-0.040	-0.142	-0.080	-0.081	-0.001	-0.062	0.308	0.296	1

Note: For variable definitions see Table 3.2

3.5.4 Model Specification

3.5.4.1 Panel Estimation

The nature of the data utilised for the study is such that it is a combination of time series and cross-sectional data, thus, providing a panel data. The assumptions of OLS cannot be fulfilled in such a situation, because OLS ignore the individual firm specific characteristic and as such pools the entire firm together as the same. The use of ordinary least squares estimation (OLS) will, therefore, yield biased results. The nature of the model is such that there are potential endogeneity problems which the use of OLS cannot resolve. Endogeneity exists where there is unobserved heterogeneity between the dependent and independent variables. To estimate such panel data, the use of fixed or random effect, two or three stage least squares is most appropriate. The choice of either depends on whether the error term is uncorrelated with the dependent variables (Wooldridge, 2005; Gujrati, 2004). Accordingly we perform the Hausman (1978) specification test which shows ($p< 0.001$) that the fixed effect is most appropriate for the analysis. The results of the fixed effect regression are presented in Tables 3.5 and 3.6. The log transformation of the variables have been utilised in the estimation process. To estimate the fixed effect model, we state the following model;

$$RISK_{it} = \beta_0 + \beta_1 CEODelta_{it-1} + \beta_2 CEO\ CashComp_{it-1} + \beta_3 Background\ risk_{it-1} + \beta_4 Compensation_{it-1} * Background\ risk_{it-1} + \sum_{n=6}^{6} Control\ Variables_{itk} + \varepsilon_{it} \quad \ldots (1)$$

n= number of control variables, k= 1, 2, 3…6

Table 3.5: Preliminary results of fixed effect models (CEO delta as interaction).

	Model 1		Model 2	
Dependent Variable: Risk	**Fixed Effects with Interactions**		**Fixed Effects with Interactions and control**	
Independent Variables	**β**	***t-stat***	**β**	***t-stat***
CEO Delta	-0.0002***	-2.620	0.019*	1.910
CEO Delta Change	0.004	0.460	0.0004	0.560
CEO Cash Comp	0.195***	7.850	0.187***	10.650
BGR 1	-0.255***	-3.390	-0.111**	-2.420
BGR 2	-0.028*	-1.690	-0.019**	-1.960
CEO Delta x BGR 1	0.044**	2.560	0.016	1.350
CEO Delta x BGR 2	0.011***	3.110	0.008***	4.460
CEO Total wealth			-0.067***	-4.730
Firm Size			0.194***	12.780
ROE			-0.031***	-3.890
Firm Cash			-0.739***	-5.980
Leverage			0.208***	20.910
CEO Age			0.063	0.700
Constant	-1.232***	-7.410	-4.281***	-10.050
R^2	0.35		0.78	
Observations	1112		1152	

Note: The dependent variable is risk taking behavior, derived from a factor analysis of R&D, Long Term Debt and Capital expenditure. All variables are defined in Table 3.2. The interaction is with CEO delta and background risk. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively. BGR 1 & 2 represents proxy for background risk; employment risk and CEO tenure respectively.

Before going to the hypothesis raised, Table 3.5 above is focused on the effect of background risk on the relationship between CEO delta and risk taking while we control for the change in delta and CEO cash compensation. We find that CEO delta in Model 1 exhibit a negative relationship with risk taking. This shows that as CEO delta increases, there is reduced risk taking suggesting increased risk aversion as a result of the greater sensitivity of the option compensation to stock price. Change in delta reveals a positive relationship with risk taking but the result is not significant. We also control for CEO cash compensation as a measure of outside wealth, we find that there is a positive relationship with CEO outside wealth and risk taking. This suggests that the greater the CEO cash compensation, the more CEOs are willing

to take risk to improve firm performance. In model 2 when we included the control variables, we find that CEO delta becomes positive but the signs of change in the delta and cash compensation remain the same.

To test our main hypotheses we first run a fixed effect regression with the main variables in Model 1 and in Model 2 we include the control variables. In line with background risk theory, Hypothesis 1a predicts a negative relationship between employment risk and risk taking. The results support the hypothesis that there will be a negative relationship between employment risk (BGR1) and risk taking behaviour. In both model 1 & 2, we find that employment risk leads to a statistically negative relationship with risk taking (β = -0.255, p≤ 1%; β=-0.111, p≤ 5%). This suggests that employment risk is of great concern to CEOs to the extent that faced with employment risk, CEOs are more likely to become more risk averse, thereby reducing risk taking activities. The results are consistent with previous studies, Charkraborty et al (2007) which suggest that threats to employment results in less risk taking. Martin et al (2013) suggest that CEO vulnerability leads to less risk taking to preserve current wealth. Similarly, Kempf and Ruenzi (2009) find that fund managers who are likely to lose their job as a result of poor midyear performance cut down on risk taking.

Hypothesis 2a also predicts a negative relationship between tenure as background risk (BGR 2) and risk taking. The results from Model 1 and 2 in Table 3.5 also support this hypothesis. We find that there is a statistically negative relationship between tenure as background risk and risk taking (β = -0.028, p≤ 10%; β=-0.019, p≤ 5%). The implication of this is that CEOs nearing the end of their tenure may reduce risk taking activities to avoid any dramatic change in their wealth. This is consistent with the studies of Belghitar and Clark (2012), Sanders (2001) & Finkelstein and Hambrick (1990) which suggest that CEOs nearing retirement may become more conservative with respect to risky decisions because, they would have accumulated firm-specific wealth over the years. However, studies that find positive

relationship relate tenure to power. For instance Lewellyn and Muller-Khale (2012) in a study of the effects of power on managerial risk taking find that CEO power is positively related to excessive risk taking (long tenure was used as a proxy for power). See also Cremers and Palia, (2011) and Simsek, (2007).

To test the effect of background risk on the relationship between CEO delta and risk taking, we include two interaction variables in both Model 1 and 2. It is observed that both the interaction of delta with employment risk (BGR 1) and tenure (BGR 2) are positive, this is contrary to our expectation, failing to provide support for hypothesis 1b & 2b. When we include the control variables in Model 2, we find the same results. This suggests that in the presence of background risk, CEO delta will lead to more risk taking, this is opposed to the predictions of background risk theory.

In Table 3.6 above we present the effect of background risk on the relationship between cash compensation and risk taking. It is assumed that cash compensation is a measure of the outside wealth of the CEO. As expected, we find a significant positive relationship between CEO cash compensation and risk taking in both Models 3 and 4, which implies that cash compensation is a measure of outside wealth, and when outside wealth is high, it encourages more risk taking. Moving on to the background risk measure, as predicted and in line with background risk theory, both background risks show statistically negative relationship with risk taking. Thus, providing support for hypotheses 1a & 2a. As shown in Table 3.6, the coefficients are statistically significant; Model 3, (BGR1; β = -0.447, p$\leq$ 5%; BGR2; β= -0.018, p$\leq$ 5%), Model 4, (BGR1; β = -0.445, p$\leq$ 5%; GBR2; β= 0-.014, p$\leq$ 10%). To test the effect of background risk on the relationship between cash compensation and risk taking, an interaction variable is generated with cash compensation and both background risk measures. We find that in Model 3, there is a significant positive (p$\leq$ 10%) relationship between the interaction of cash compensation and employment risk (BGR 1), which means that in the

presence of background risk, cash compensation will continue to lead to more risk taking, thus supporting hypothesis 1c. This is not surprising because when CEOs have wealth outside

Table 3.6: Preliminary results of fixed effect models (CEO cash compensation as interaction).

Dependent Variable: Risk	**Model 3 Fixed Effect**		**Model 4 Fixed effect with control variables**	
Independent Variables	**β**	***t-stat***	**β**	***t-stat***
CEO Cash Comp	0.160***	4.900	0.065**	2.050
CEO Delta	-0.001	-0.090	-0.000**	-2.400
CEO Delta-change	-0.001*	-1.760	-0.000	-0.400
BGR 1	-0.447**	-2.140	-0.445**	-2.240
BGR 2	-0.018**	-2.230	-0.014*	-1.820
CEO Cash Comp x BGR 1	0.053*	1.680	0.056*	1.870
CEO Cash Comp x BGR 2	0.000***	3.000	0.000***	3.460
CEO Total wealth			0.023**	2.450
Firm Size			0.171***	10.310
ROE			-0.045***	-4.920
Firm Cash			-1.142***	-9.200
Leverage			0.007***	14.370
CEO Age			-0.000	-0.140
Constant	-0.973***	-4.630	-3.010***	-10.510
R^2	0.31		0.73	
Observations	1331		1264	

Note: The dependent variable is risk taking behavior, derived from a factor analysis of R&D, Long Term Debt and Capital expenditure. All variables are defined in Table 3.2. The interaction is with CEO cash compensation and background risk. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively. BGR 1 & 2 represents proxy for background risk; employment risk and CEO tenure respectively.

the firm which makes them well diversified they are more likely to take on more risk in the presence of employment risk. The result is consistent with the assertion of Belkhir and Boubaker, (2013) and Guay, (1999). The results remain true when we include the interaction variable in Model 4. However, when we examine the interaction between cash compensation and tenure (BGR 2), we find a positive relationship in both Models which is contrary to our

expectation in hypothesis 2c. This indicates that CEO cash compensation will continue to lead to more risk taking for CEOs getting close to the end of their tenure.

However, we cannot totally rely on these results because fixed effect regression does not control for other sources of endogeneity, hence, the next section employs a more sophisticated approach such as the dynamic GMM.

3.5.4.2 Dynamic GMM Estimation

Although fixed effect regression can resolve the bias of unobserved firm heterogeneity, Wintoki et al. (2012) asserts that apart from the endogeneity problem arising as a result of unobserved factors that affect both dependent and independent variables, the second source of potential endogeneity in the finance literature is that of simultaneity. This result when there is reverse causality between the dependent and independent variables. In this case, we assume the amount of compensation paid to CEOs affects their risk taking behaviour. However, it is possible that risk taking can affect the amount of compensation (assuming that risk taking leads to better firm performance) hence, risk taking and compensation are simultaneously determined. Any results obtained from OLS and fixed effects regression would be biased. Although previous research (Eisenberg et al, 2008; Black et al. 2006; Rajgopal, and Shevlin, 2002; Coles et al , 2008), has tried to control for endogeneity by using lagged independent variables as well as two & three stage least squares, results have remained inconclusive. This might be because the two or three stage least square requires finding suitable/ valid instruments outside the model which could be burdensome. It is also more difficult in the case of this research that involves interaction variables. To solve the problem of simultaneity and the problem of finding suitable instruments, Wintoki et al (2012) suggest the use of dynamic panel GMM estimation. It is also important to note that due to the persistent nature of the dependent variable (that is, past values of the dependent variable affects current values), the dynamic GMM estimation technique is most appropriate. This

estimation method was first proposed by Arellano and Bond (1991) and then developed by Arellano and Bond (1995) and Blundell and Bond (1998). It is more appropriate for data with few time periods and large number of observations (Roodman, 2006). Although it has been applied in a few studies (Lodh, Monomita and Chen, 2014; Belghitar and Clark, 2012; Ozkan, 2007) examining family ownership, corporate governance, and firm performance, to the best of my knowledge dynamic GMM estimation has not been applied in examining background risk and risk taking studies.

There are two steps in the dynamic GMM estimation process, (1) A first difference of the model is estimated which eliminates the problem of time invariant unobserved heterogeneity. (2) Employing a GMM framework, the lagged values of the explanatory variables are used as instruments for current explanatory variables whilst also including the lagged value of the dependent variable[12]. As noted by Wintoki et al (2012), finding a suitable instrument is often cumbersome; hence lagged variables are next best instruments. These instruments are assumed to be exogenous. In this second step, the first differenced variables are used as instruments to construct a system of equations in levels. Because the GMM estimator controls for time-invariant unobserved heterogeneity and simultaneity it is suggested to produce a more efficient result. We present the following equation;

$$RISK_{it} = \pi_0 RISK_{it-1} + \beta_1 CEODelta_{it} + \beta_2 CEO\ CashComp_{it} + \beta_3 Background\ risk_{it} + \beta_4 Compensation_{it} * Background\ risk_{it} + \sum_{n=6}^{6} Control\ Variables_{itk} + \varepsilon_{it} \quad \textbf{.....(2)}$$

Due to the bias resulting from the small sample, we employ the two-step GMM estimator (as suggested by Windmeijer, 2005) in the estimation process. The log transformation of the variables has been utilised in the analysis.

[12] Lagged values of dependent variables are included in the model because it is assumed that there is a dynamic relationship between the current values of the independent variables and the dependent variable (Wintoki et al. 2012).

3.6 Empirical Results and Analysis for Dynamic GMM

To test the validity of the fixed effect results and to ensure that both types of endogeneity problems are addressed simultaneously, we employ a dynamic GMM model. Table 3.7 presents the estimation for dynamic GMM. In both Models, the positive and significant coefficient for the lagged risk taking variable our dependent variable shows that there is significant persistence in the measure of risk taking. In Model 6 we include the change in CEO delta to examine if there is a difference in our estimation results. We expect that change in the CEO delta will yield a different sign from CEO delta. We observe in Model 5 that CEO delta has a statistically strong negative relationship (β = -0.089, $p \leq 1\%$) with risk taking, suggesting that the greater the sensitivity of CEO option compensation to the firm stock price, the more risk averse CEOs will become. That is for a given increase in delta, CEOs will reduce risk taking activities by approximately 9%. The studies of Belghitar and Clark (2014) based on the works of Ross (2004) assert that the utility function of the CEO determines the relationship between delta and risk taking. Whether a CEO exhibits Decreasing Absolute Risk Aversion (DARA) or Increasing Absolute Risk Aversion (IARA) or Constant Risk Aversion (CARA) depends on the sign of the coefficient of delta. Taking this into consideration, we find that CEO delta results in less risk taking, thus exhibiting increasing absolute risk aversion (IARA). This is consistent with previous studies which find a negative relationship between delta and risk taking. See for example Knof et al (2002) who find that CEO delta leads to more hedging activities. This is, however, contrary to the findings of Belghitar and Clark (2014) on cash holdings, which find a negative relationship between CEO delta and cash holdings (a measure of CEO risk aversion) so that as CEO delta increases, cash holding reduces. When we include change in CEO delta and the control variables in Model 6, we find that delta remains statistically significant with the coefficient increasing to 11%.

Table 3.7: Dynamic GMM Estimation CEO delta Interaction.

Dependent Variable: Risk	Model 5 Dynamic Model without change in delta		Model 6 Dynamic Model with change in delta	
Independent Variables	**β**	***t-stat***	**β**	***t-stat***
$Risk_{t-1}$	0.382***	7.660	0.344***	6.630
CEO Delta	-0.089***	-3.360	-0.114***	-3.720
CEO Delta Change			0.003*	1.760
CEO Cash Comp	0.001	0.030	0.009	0.170
BGR 1	-0.074***	-2.630	-0.069**	-2.270
BGR 2	-0.152**	-2.390	-0.191**	-2.380
CEO Delta x BGR 1	-0.011*	-1.940	-0.012*	-1.780
CEO Delta x BGR 2	0.039**	2.540	0.048***	2.720
CEO Total wealth	0.056***	3.460	0.075***	4.050
Firm Size	0.279***	8.930	0.293***	8.080
ROE	-0.066**	-2.520	-0.077***	-2.790
Firm Cash	-0.715	-1.650	-1.037**	-2.100
Leverage	0.010***	5.590	0.010***	4.650
CEO Age	0.509*	1.870	0.605*	1.940
Constant	-6.106***	-5.310	-6.742***	-5.260
Observations	1017		1017	
AR(1)	0.001		0.000	
AR(2)	0.946		0.946	
Hansen test	0.668		0.283	

Note: The dependent variable is risk taking behavior, derived from a factor analysis of R&D, Long Term Debt and Capital expenditure. All variables are defined in Table 3.2. β represents the coefficient while t-stat is the t-statistics. BGR 1 is a proxy for background risk measured as employment risk. GBR 2 is a proxy for background risk measured as Tenure. AR (1) and AR(2) are tests of first and second order serial correlation. Hansen test is a test of overidentifying restrictions, under the null of instrument validity. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively.

Going on to our main hypotheses, Hypothesis 1a predicts that there is a negative relationship between employment risk (BGR 1) our measure of background risk and risk taking. We find statistically significant results in support of the hypothesis in both Models 5 & 6, (β = -0.074, $p \leq 1\%$; β=-0.069, $p \leq 5\%$) this implies that CEOs facing high employment risk are more risk averse and will engage in less risk taking activities. For a given level of employment risk, risk taking activities will reduce by 7%. This is in line with previous research like Charkraborty et al. (2007) which finds support for lower risk taking when employment risk is high. Hypothesis 2a also predicts a negative relationship between tenure (BGR 2) our second

measure of background risk and risk taking. The results are highly significant in both Models 5&6, (β = -0.152, p≤ 5%; β=-0.191, p≤ 5%). The results are as expected because CEO with higher tenure are probably closer to retirement and will be less willing to take up risky investment like R&D, Capital Expenditure and Long-term debt because the benefits of such investments do not manifest until later years. Also, such CEOs become powerful and entrenched because they have acquired a substantial amount of firm based wealth so that they become risk averse, (Zona, 2016; McClelland et al, 2012; Finkelstein, 1992)

Background risk theory asserts that the introduction of an unfair background risk will lead to increased risk aversion. To examine the effect of introducing background risk to the risk already existing in the compensation package, an interaction variable is generated first in Table 3.7 between CEO delta and background risk variables, employment risk (BGR 1) and tenure (BGR 2). On examination of Model 5 in Table 3.7, we find that the presence of background risk (BGR 1) results in a statistically significant negative relationship (β=-0.011, p≤ 10%) between CEO delta and risk taking, therefore supporting hypothesis 1b. The result indicates that in the presence of background risk such as employment risk CEO delta will continue to lead to lower risk taking, suggesting increased risk aversion. The results remain true and significant (β= -0.012, p≤ 10%) in Model 6 with the inclusion of change in delta and control variables. The results are in tandem with those of Martin et al (2013) which finds that employment vulnerability leads to reduced risk taking. Also, Kempf and Ruenzi (2009) find the same results for fund managers who are likely to lose their job as a result of poor midyear performance. The prediction for the second background risk variable tenure proposes a negative relationship between delta and risk taking in the presence of background risk (tenure). On examination of both Models 5 & 6, we find that the interaction of BGR 2 and CEO delta exhibits a positive relationship. Although statistically significant (β = 0.039, p≤ 5%; β= -0.048, p≤ 1%), the results fail to support hypothesis 2b. A reason for this may be that

long tenure sometimes comes with experience, so that the risk of lower income after retirement does not deter CEOs from taking calculated risk to increase stock price and then the value of their portfolio before retirement. Indeed, Simsek (2007) finds that CEO tenure can be used as a measure of industry experience and finds that long-tenured CEOs have more experience and often engage in more risk taking through the top management team. Table 3.8 examines the second component of executive compensation, which is the CEOs cash compensation. In the table, our emphasis is on cash compensation, but we control for CEO delta in Model 7 and both CEO delta and change in CEO delta in Model 8. We find that CEO cash compensation is negatively related to risk taking, this is strongly significant with $\beta = -0.491$, $p \leq 1\%$; $\beta = -0.568$, $p \leq 1\%$ in Models 7 & 8 respectively. One would expect that more cash compensation should lead to more risk taking because cash compensation is a measure of wealth diversification (Belkhir and Boubaker, 2013; Guay, 1999). A plausible reason for this contrary expectation is that since the proportion of cash compensation to total compensation is very small, cash compensation as a measure of outside wealth does not provide sufficient motivation for CEOs to engage in risk taking activities.

Table 3.8: Dynamic GMM Estimation CEO Cash Compensation Interaction.

Dependent Variable: Risk	**Model 7 Dynamic Model without change in delta**		**Model 8 Dynamic Model With change in delta**	
Independent Variables	**β**	***t-stat***	**β**	***t-stat***
$Risk_{t-1}$	0.534***	10.630	0.391***	4.180
CEO Cash Comp	-0.491***	-7.110	-0.568***	-5.360
CEO Delta	-0.048**	-2.360	-0.001*	-1.820
CEO Delta Change			0.002	0.390
BGR 1	-2.704***	-5.740	-2.649***	-3.860
BGR 2	-0.097***	-3.280	-0.157***	-2.710
CEO Cash Comp x BGR 1	0.396***	5.640	0.382***	3.850
CEO Cash Comp x BGR 2	0.000**	2.010	0.000	1.020
CEO Total wealth	0.063***	3.120	0.050**	1.990
Firm Size	0.227***	7.470	0.268***	5.430
ROE	-0.088***	-3.270	-0.077**	-2.100
Firm Cash	0.601	1.340	1.214	1.550
Leverage	0.011***	6.250	0.014***	3.720
CEO Age	-0.007	-1.550	-0.013	-1.470
Observations	1026		992	
AR(1)	0.000		0.000	
AR(2)	0.555		0.405	
Hansen test	0.733		0.101	

Note: The dependent variable is risk taking behavior, derived from a factor analysis of R&D, Long Term Debt and Capital expenditure. All variables are defined in Table 3.2. β represents the coefficient while t-stat is the t-statistics. BGR 1 is a proxy for background risk measured as employment risk. GBR 2 is a proxy for background risk measured as Tenure. AR (1) and AR 2) are tests of first and second order serial correlation. Hansen test is a test of overidentifying restrictions, under the null of instrument validity. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively.

An examination of Table 3.8 shows that there is a negative relationship between BGR1 and risk taking, and BGR2 and risk taking. The results still provide support for hypothesis 1a and 2a as discussed above. When we move on to examine the effect of introducing background risk into the compensation/ risk taking relationship, we observe that the interaction of BGR 1 (employment risk) with cash compensation reveals a 1% statistically positive relationship (β = 0.396, p≤ 1%; β= 0.382, p≤ 1%) with risk taking in both Models 7 and 8. This means that in the presence of background risk such as possible unemployment, CEO cash compensation

would result in more risk taking, thus supporting hypothesis 1c. As suggested by Belkhir and Boubaker, (2013) and Guay, (1999), the availability of cash compensation serves as assurance through diversification outside the firm. This is also consistent with the studies of Larraza-Kintana et al (2007) which show that employment risk results in more risk taking behaviour, they suggest that the reason for increased risk taking in the face of potential job loss is to try and improve firm performance if the CEO can secure the job. The effect of introducing a second background risk BGR 2 (tenure) shows that there is a significant positive relationship in Model 7, between cash compensation and risk taking in the presence of background risk, but we find no evidence of this effect in Model 8 as the results are not significant. A possible reason for the positive result in Model 7 could be that long tenure may lead to more experience so that CEO may become more confident to engage in risky projects, (Cheng and Zheng,2014; Simsek, 2007). Taken together, the results of Model 7& 8 do not support hypothesis 2c.

To be consistent with other studies (Belghitar and Clark, 2015, Lodh et al, 2014; Ozkan, 2007) we include a number of control variables in both Tables 3.7 and 3.8. We include CEO total wealth as a proxy for the total firm based wealth owned by the CEO. It is observed that CEO total wealth is positive and significant in both tables, suggesting that the more wealth the CEO has the greater risk taking behaviour. This is consistent with agency theory (Jensen and Meckling, 1976) which argues that compensating executives with stocks and options of the firm would make risk averse executives less risk averse. We also find a statistically significant relationship for firm size (measured by market capitalization) and for leverage (the ratio of total debt to total assets). Suggesting that as firm size increases, CEOs take more risk and also increased leverage is a signal of risk-taking behaviour. For availability of cash (firm cash), we use the amount of cash and cash equivalent. We find no support for cash as affecting risk taking since the results obtained are not significant. For ROE our measure of

performance, we find that there is a statistically negative relationship, so that as performance increases, CEOs tend to reduce risk taking to avoid fluctuations in good performance records. Lastly, we control for CEO age. The results in Table 3.7 show that there is a positive relationship between CEO age and risk taking, this is consistent with previous studies, suggesting that older CEOs are more experienced and are able to take calculated risks. These results are consistent with the findings of Ozkan and Ozkan (2004), Belghitar and Clark (2014), Coles et al. (2006). This is however not significant in Table 4.8.

3.7 Robustness Tests

In this section, we conduct further robustness tests to ascertain the validity of our results presented earlier. First, we estimated our equation using the periods before the global financial crisis. By eliminating years 2008- 2010, this is an attempt to filter out any effect of the crisis on risk taking behaviour. The results are reported in Table 3.9. We can observe that the results remain qualitatively the same for both CEO delta and cash compensation as it relates to background risk. This suggests that our earlier results which include the years during and after the financial crisis (2008-2010) are not biased by the financial crisis since it has no effect on our results. Hence, we can conclude that background risk would continue to have the same effect on risk taking in both stable and unstable economic times.

Table 3.9: Robustness Test: (Pre-crisis).

Dependent Variable: Risk	Model 1 Dynamic Model for CEO Delta	Model 2 Dynamic Model for CEO Cash Comp
Independent Variables	**β**	**β**
$Risk_{t-1}$	0.260***	0.478***
	(3.280)	(7.100)
CEO Delta	-0.172***	-0.0001**
	(-2.980)	(-2.600)
CEO Delta Change	0.001	0.001
	(1.230)	(1.380)
CEO Cash Comp	0.004	-0.534***
	(0.070)	(-5.570)
BGR 1	-0.304**	-2.546***
	(-1.980)	(-4.480)
BGR 2	-0.088*	-0.064***
	(-1.800)	(-3.380)
CEO Delta x BGR 1	0.100**	
	(2.070)	
CEO Delta x BGR 2	0.026*	
	(1.790)	
CEO Cash Comp x BGR 1		0.373***
		(4.500)
CEO Cash Comp x BGR 2		0.00003
		(1.310)
CEO Total wealth	0.019	0.063***
	(0.860)	(2.690)
Firm Size	0.365***	0.243***
	(5.530)	5.550
ROE	-0.099**	-0.073**
	(-2.470)	(-2.580)
Firm Cash	0.489	0.890
	(0.770)	(1.640)
Leverage	0.018***	0.012***
	(4.970)	(5.170)
CEO Age	0.640*	-0.012*
	(1.850)	(-1.94)
Year Dummy	Yes	Yes
Industry Dummy	Yes	Yes
Observations	856	885
AR(1)	0.003	0.000
AR(2)	0.614	0.508
Hansen test	0.183	0.310

Note: The dependent variable is risk taking behavior, derived from a factor analysis of R&D, Long Term Debt and Capital expenditure. All variables are defined in Table 1. β represents the coefficient while t-stat is in parenthesis. BGR 1 is a proxy for background risk measured as employment risk. GBR 2 is a proxy for background risk measured as Tenure. AR (1) and AR (2) are tests of first and second order serial correlation. Hansen test is a test of overidentifying restrictions, under the null of instrument validity *, **, *** represents significance at the 10%, 5% and 1% significance level respectively.

To further check the robustness of earlier results, we split our risk taking variable (measured by Research & Development expense, Long-Term Debt, and Capital expenditure) into its individual component to examine if the results are consistent with previous literature. For example studies like Coles et al used R&D, Guay (1999), Sanders and Hambrick (2007), Gao, et al, Denvers et al (2008), Martin et al (2013), have used one or both of the R&D, long-term debt and capital expenditure to capture executive risk taking behaviour. Although we perceive that the value of long term debt as employed by previous studies may not capture risk taking on its own, we have included leverage which is a measure of ratio of long term debt to capital. The results for CEO delta and CEO cash compensation are reported below in Tables 3.10 & 3.11 respectively. The results are qualitatively similar to those in tables 3.7 and 3.8 confirming our earlier results that our measures of risk taking are not biased.

Table 3.10: Robustness Test: Dynamic Model for CEO Delta interaction for individual risk taking variables.

	(1)	(2)	(3)
Dependent Variable: Risk	**R&D**	**Long Term Debt**	**CapEx**
Independent Variables	**β**	**β**	**β**
$R\&D_{t-1}$	0.801***		
	(13.52)		
LTD_{t-1}		0.187***	
		(3.1)	
$CapEx_{t-1}$			0.647***
			(8.61)
CEO Delta	-0.085*	-0.304***	-0.204***
	(-1.84)	(-2.87)	(-2.69)
CEO Delta Change	0.0002	0.003	0.004***
	(0.22)	(0.85)	(5.38)
CEO Cash Comp	0.063	0.109	-0.0001**
	(1.07)	(0.92)	(-2.16)
BGR1	-0.038	-0.874**	-0.302
	(-0.16)	(-2.03)	(-1.15)
BGR2	-0.132**	-0.247	-0.258***
	(-2.20)	(-1.17)	(-2.91)
CEO Delta X BGR1	0.023	0.212*	0.048
	(0.44)	(1.95)	(0.74)
CEO Delta X BGR2	0.038**	0.016	0.065**
	(2.03)	(0.22)	-2.51
CEO Total wealth	0.035	0.045	0.101***
	(1.45)	-0.85	(3.38)
Firm Size	0.122***	0.806***	0.395***
	(2.9)	(8.89)	(4.02)
ROE	-0.110*	-0.458***	0.173***
	(-1.76)	(-3.49)	(3.42)
Firm Cash	0.022	-3.624*	-1.661***
	(0.03)	(-1.92)	(-2.73)
Leverage	-0.002	0.069***	0.002
	(-1.00)	(6.62)	(0.86)
CEO Age	0.013	0.079	-0.016
	(-0.11)	(0.09)	(-0.04)
Observations	1068	1053	1044
AR(1)	0.009	0.005	0.000
AR(2)	0.217	0.733	0.132
Hansen test	0.815	0.893	0.698

Note: The dependent variable for (1), (2) & (3) are Research& Development expense, Long-term debt & Capital expenditure respectively. BGR 1 is a proxy for background risk measured as employment risk. GBR 2 is a proxy for background risk measured as Tenure. AR (1) and AR (2) are tests of first and second order serial correlation respectively. Hansen test is a test of over identifying restrictions, under the null of instrument validity, The *t*-statistics is in parenthesis, *, **, *** represents significance at the 10%, 5% and 1% significance level.

Table 3.11: Robustness Test: Dynamic Model for CEO Cash Compensation Interaction for individual risk taking variables.

Dependent Variable: Risk	(1) R&D	(2) LongTerm Debt	(3) CapEx
Independent Variables	**β**	**β**	**β**
$R\&D_{t-1}$	0.893***		
	(22.65)		
LTD_{t-1}		0.158***	
		(2.64)	
$CapEx_{t-1}$			0.566***
			(8.82)
CEO Delta	-0.00018**	-0.172*	-0.00032***
	(-2.09)	(-1.68)	(-2.75)
CEO Delta Change	0.001	0.004	0.005***
	(0.93)	(0.75)	(3.04)
CEO Cash Comp	-0.204**	-0.149	-0.692***
	(-2.09)	(-0.82)	(-3.89)
BGR1	-0.324	-4.207**	-0.042
	(-0.77)	(-2.48)	(-0.61)
BGR2	-0.084***	-0.177	-0.258***
	(-2.87)	(-1.66)	(-3.01)
CEO Cash Comp X BGR1	0.050	0.607**	0.003
	(0.81)	(2.33)	(0.22)
CEO Cash Comp X BGR2	0.00007*	-0.0005***	0.0003*
	(1.94)	(-2.78)	(1.94)
CEO Total wealth	0.035	0.075	0.119***
	(1.32)	(1.19)	(3.06)
Firm Size	0.132***	0.847***	0.534***
	(2.77)	(7.14)	(5.85)
ROE	-0.080**	-0.612***	0.002
	(-2.12)	(-3.81)	(0.02)
Firm Cash	2.993***	-2.416	2.877**
	(3.61)	(-1.20)	(2.19)
Leverage	0.004	0.089***	0.011***
	(1.37)	(8.72)	(3.08)
CEO Age	0.00067	-0.034	0.004132
	(0.11)	(-1.46)	(0.23)
Observations	1035	1028	1014
AR(1)	0.003	0.002	0.000
AR(2)	0.213	0.176	0.120
Hansen test	0.621	0.642	0.208

Note: The dependent variable for (1), (2) & (3) are Research& Development expense, Long-term debt & Capital expenditure respectively. AR (1) and AR (2) are tests of first and second order serial correlation respectively. Hansen test is a test of over identifying restrictions, under the null of instrument validity. The *t*-statistics is in parenthesis, *, **, *** represents significance at the 10%, 5% and 1% significance level.

3.8. Conclusion

This chapter presents the empirical link between compensation and risk taking in the presence of background risk. By developing three hypotheses each for the two measures of background risk, we find evidence in some instance supporting the background risk theory based on standard risk aversion by Kimball (1993).

By first estimating a fixed effect model to control for unobserved firm heterogeneity, we find evidence that employment risk leads to risk aversion. However, contrary to expectation, when we examined the effect of employment risk on the relationship between CEO cash compensation and risk taking, we find a statistically positive effect. This suggests that in the presence of background risk, cash compensation will lead to risk taking. Although the effect of CEO delta is negative, we fail to find a significant result. Going further to examine tenure as background risk, we find that tenure has an inverse relationship with risk taking, this is aggravated when we examined the effect on the delta/risk taking relationship. Cash compensation, on the other hand, results in more risk taking in the presence of background risk (tenure). This is attributed to the fact that cash compensation is a signal for well-diversified CEO, which is an indication of lower risk aversion.

Due to the persistent nature of the dependent variable; risk taking, and other endogeneity issues, we examined the proposed relationship in a dynamic panel GMM framework. The results using this framework show that both background risk measures continues to have a negative effect on risk taking. Also in the presence of employment risk, there is a negative effect of delta on risk taking. This lends support for the background risk theory that an additional risk will result in risk aversion which is observed in reduced risk taking. Contrary to expectation, we find that CEO cash compensation leads to risk aversion where employment is threatened. Next, we find that CEO delta will inhibit risk taking when CEOs

are nearing retirement. However, higher cash compensation will encourage risk taking when CEOs are close to retirement.

Lastly, we conduct a number of robustness checks to confirm the validity of results obtained. Specifically, we eliminated years from 2007 to 2008 to find out if the economic crisis at that time affects the results, the results obtained remain qualitatively the same. Next, we disaggregated the dependent variable into its component parts to investigate if the variables really measure risk taking. The results obtained remain qualitatively the same, indicating that results are not biased to the method of risk measurement.

This study is however not without limitations. For example, we have focused on non-financial firms in the FTSE-350 index. Therefore, we do not know whether the findings of this study can be generalised to financial firms. Further research can examine the effect of background risk on the risk taking behaviours of CEOs in financial institutions. Secondly, there may be other background risk confronting the CEO, but we have examined two in this study. It would be a good starting point for future research to consider other forms of background risk. Lastly, some studies have considered diversification as a risky venture, but we have focused on the three most commonly used measures of risk taking in the literature. These limitations are highlighted because they can be used as starting points for future research, but they do not undermine the reliability of the results obtained in this study.

CHAPTER 4: EXECUTIVE COMPENSATION AND FIRM PERFORMANCE IN THE PRESENCE OF BACKGROUND RISK

4.1 Introduction

The relationship between executive compensation and corporate performance has been a source of unending debates in the academic field and amongst practitioners. Many of which focus on the optimality of CEO pay or the reason for the rise in CEO pay, more still on the link between pay and firm risk or performance. But there seems to be inconclusive evidence as to the effect of pay on firm performance. The extant literature mostly based on the theoretical underpinnings of agency theory by Jensen and Meckling (1976), argues that if executives are compensated with stocks and options of the firm, executives would act in the interest of shareholders and this will result in better firm performance. On the contrary, entrenchment theory (Bebchuk and Fried, 2003) argues that when managers own a substantial amount of a firm's stock, they become too powerful and entrenched so that this results in poor firm performance. The literature has mostly provided evidence on a two-way relationship, examining the effect of compensation on firm performance or the effect of performance on executive compensation, (see Ozkan, 2011; Gregg et al, 2005; Core et al, 1999, Murphy, 1986). The results of these empirical studies have provided mixed results with either positive or negative pay/performance relationship, while others report little or no relationship between executive pay and performance. These results are so even after controlling for factors such as governance mechanisms, firm size, ownership structure etc. An important but yet unexplored aspect of the CEO that may affect the compensation- firm performance relationship is the background risk faced by the CEO. We refer to background risk as an additional risk the CEO is exposed to which cannot be diversified. We know that the CEO is exposed to an inherent risk by virtue of the close association of the compensation to the riskiness of the firm's stock price. This can either lead to risk aversion (lower risk aversion) and poor performance (better performance). But what is the nature of this pay-

performance relationship when the CEO considers the background risk he is experiencing? This is the thrust of this chapter. The background risk theory (Kimball, 1993) argues that an additional risk to an inherent risk such as background risk would lead to risk aversion. But we do not know the effect of risk aversion on firm performance considering the risk associated with the compensation and the background risk confronting the CEO simultaneously. To address this line of thought, this chapter examines the effect of two types of background risks; CEO employment risk and CEO tenure on the pay/ performance relationship. In so doing, the chapter attempts to make two key contributions to the literature. The first is to attempt to provide new empirical evidence of the effect of background risk on firm performance on one hand and the effect of background risk on the pay-performance relationship on the other hand. To the best of my knowledge, there is no study that has examined background risk as it relates to executive compensation and firm performance. Secondly, this study contributes to existing literature on both firm performance and executive compensation to the extent that it provides evidence of instances where compensation will not result in better firm performance.

The chapter is organised as follows; following this introductory section is section 4.2 which presents the literature review on executive compensation and firm performance, this is immediately followed by theory and related hypothesis section; 4.3. Section 4.4 examines the various measures of firm performance while 4.5 present the research design. In section 4.6, we show the empirical results and analysis. The penultimate section, 4.7 provides results of some robustness tests while the last section, 4.8 concludes the chapter.

4.2 Literature Review on Executive Compensation and Firm Performance

Recent years have seen high levels of increase in executive pay which has caused serious agitation by shareholders and other stakeholders of listed companies. The rationale for executive compensation is to align the interest of executives (who are believed to have self-serving interest and are more risk averse) with those of shareholders (who are less risk averse)

to produce a better firm performance. It is assumed that when managers become part owners of the firm and not just managers of other people's investment, they would work hard to carry on the business of the firm like it is their own. Jensen and Murphy (1990) notes that the pay policy of an organisation has been observed as one of the major determining factors of a company's success because it determines the behaviour of senior managers as well as the type of managers it employs. By engaging in profitable investment decisions, better firm performance can be achieved, which in turn leads to increased shareholders return. Although some studies report positive pay/ performance relationship, others argue that there is a negative relationship; a few others find little or no relationship (Basuroy et al, 2014). Whether compensation really leads to better firm performance is a subject of constant debate around the world and in academic literature. Compared to the UK and the rest of the world, the US has seen a lot of investigation on the pay/performance relationship. For example, Hall and Liebman (1998) in a study of 478 CEOs of large US companies from 1980-1994 finds a significant positive relationship between CEO compensation and firm performance. In examining the pay of the top five executives of the largest US public firms for a five-year period (1993-1998), Aggarwal and Samwick (1999) find a positive relationship between total compensation and firm performance. Mehran (1995) study the executive compensation of a sample of 153 manufacturing firms in the US. They find that the percentage of equity based compensation held by executives directly affects firm value measured by both Tobin's Q and ROA. In a more recent study on the impact of CEO compensation on firm value through customer satisfaction, Basuroy et al (2014) suggest that CEO short-term compensation or cash compensation has no effect on firm performance. The study, however, finds that CEO wealth delta positively affects the performance of firms through customer satisfaction.

In the UK, Hubbard and Palia (1995) find a positive relationship between CEO pay and firm performance measured as shareholders wealth in a sample of commercial banks. They argue

that the findings support the view that the job of the CEO requires great talent and such talent should be rewarded with higher pay levels. The study reveals that the pay/performance sensitivity is strongest in highly competitive markets where interstate banking is not permitted. Similarly, McNight and Tomkins (1999) examined the pay-performance relationship for a sample of 109 companies from 1991- 1995. They disaggregated the compensation package into salary, bonuses and options to examine the individual impact of the components on firm performance. McNight and Tomkins (1999) provide evidence of a strong positive relationship between executive pay and firm performance measured by shareholders returns. Taking bonus as a component of executive compensation pay package, Guo et al (2006) finds that in Taiwan there is a positive relationship between the amounts of bonuses received and firm performance. Similarly, Benito and Conyon (1999) conclude that executive pay has led to better firm performance. In the same line Ozkan (2011) examine a unique set of hand collected UK panel data for 390 non-financial firms. They find a strong positive relationship between CEO cash compensation and firm performance, but an examination of total compensation though positive, failed to find any significant relationship with firm performance. Ozkan(2011) also controlled for a comprehensive set of corporate governance variable, where they find that non-executive directors have no significant effect on the CEO cash compensation, but they find a strong positive relationship between non-executive ownership and CEO cash compensation, and that institutional ownership has a significant positive effect on the pay-performance relationship.

The recent regulation on 'Say on Pay' has seen the emergence of empirical literature in this regard. Say on Pay was first enacted in the UK in August 2002. The aim is to promote shareholders participation and engagement in determining and influencing executive pay. It further helps to alleviate shareholders' fears that executive compensation is not optimal, (Conyon and Sadler, 2010). Ferri and Maber (2013) examine the sensitivity of CEO pay to

performance before and after the say on pay regulation in the UK. By studying a large sample of UK firms, they find that there is increased sensitivity of CEO pay to poor performance after the enactment of the regulation, but there was no change in the relationship between other economic determinants of pay. The increased sensitivity is found among high dissent firms with excess CEO pay before the new regulation. Ferri and Maber (2013) conclude that the new regulation is effective for poorly performing firms. Similarly, Cai and Walking (2011) finds that the enactment of Say on Pay in 2007 in the US is more effective in poorly performing firms and creates firm value for organisations with poor corporate governance practices and suboptimal executive compensation. Correa and Lel (2014) conduct a study on the impact of "Say on Pay" on firm performance in companies around the world. They argue that say on pay laws result in lower CEO pay levels, higher pay-performance sensitivity and better firm performance particularly in firms where the CEO pay was relatively high compared to other top executives. Berthelot et al (2015) study the impact of "Say on Pay" in Canada. Unlike the UK and US, "Say on Pay" in Canada is not prescribed by any regulation in Canada. The study reveals that voluntary implementation of "Say on Pay" by some companies in Canada had no effect on pay-performance relationship nor does it lead to a reduction in executive total compensation.

Contrary to the above findings, the entrenchment hypothesis taken from the agency theory (Jensen and Meckling, 1976) however, predicts a negative relationship between managerial compensation and firm performance. Because when managers own a substantial amount of the firm's stock, they become too "big" to be disciplined by external and internal forces and decisions made might not be value maximising leading to poor firm performance. For example, Short and Keassey (1999) find that higher ownership leads to entrenchment in the UK. On the other hand, Cho (1998) asserts that it is a firm's performance that affects executive compensation and not compensation affecting performance. They find a non-linear

relationship between firm performance and managerial ownership. However, the findings of Davies et al (2005) suggest that firm performance can only be affected by very high levels of managerial ownership (ownership above 50%).

While the above studies provide either a positive or negative relationship between compensation and performance, studies like Garen (1994) finds a weak relationship between executive compensation and firm performance. Demsetz and Villalonga (2001) find no statistically significant relationship between ownership structure and firm performance. In a related study, Matolcsy (2000) finds no relationship between changes in cash compensation and changes in firm performance during periods of economic growth. In the same line, Demsetz and Lehn (1985) study a sample of 511 firms covering a five year period; they show that there is no relationship between accounting measures of firm performance and executive ownership. In the UK, Gregg et al. (2005) find that there is little relationship between CEO cash compensation and firm performance. Similarly, Banghoj et al (2010) find that for privately held companies in Denmark, there is a weak relationship between pay and firm performance.

Going beyond the pay/performance framework, Core et al (1999) examined the relationship between CEO compensation and governance structure. They find that compensation has a statistically negative relationship with performance. Suggesting that firms with poor governance structures have greater agency costs so that they pay more compensation, and such firms with greater agency problem perform worse. Lee et al (2008) examine the dispersion of compensation among executives and the effect of this dispersion on firm performance. For a sample of listed firms in the US, the study finds that firm performance measured by Tobin's Q is positively associated with the degree of dispersion amongst executive pay. Lee at al. (2008) conclude that good corporate governance stemming from board independence fosters the positive association.

Taken together, the above analysis mostly based on agency theory suggests that there is no conclusion as to the effect of compensation on performance, neither is there conclusions on the effect of performance on pay. A possible reason for such inconsistent results is the fact that these studies have not considered the indirect effect of background risk on the pay-performance relationship. No wonder, Jensen and Murphy (1990) emphasise the importance of integrating agency theory with other paradigms on the pay-performance relationship. Background risk as earlier discussed is any risk that can affect the behaviour of an individual in the presence of an inherent risk often resulting in risk aversion. For example, there is an inherent risk associated with executive option pay that makes the option compensation sensitive to changes in the firm's stock price and stock returns volatility. Therefore, if the CEO is faced with an additional risk known as background risk, this may have an effect on firm performance. The background risk theory by Kimball (1993) suggests that in the presence of one risk, an investor is unwilling to accommodate an additional risk, such that the increased risk will lead to more risk aversion. When CEOs who are meant to act in the best interest of shareholders become risk averse, they may fail to take up positive NPV projects which are most times risky but yield high returns. It is therefore expected that there should be an effect of background risk on the relationship between compensation and firm performance. In this connection, we now examine two background risks that might affect the pay-performance relationship.

4.3Theory and Related Hypotheses

4.3.1 Background Risk (Employment risk) and Firm Performance

Employment risk refers to the probability or likelihood of a CEO losing his job before the expiration of his contract. Hartzell (1998) attributes the likelihood of dismissal to a number of reasons; pay- performance sensitivity, age, tenure, board composition and firm industry. The probability and actual dismissal of the CEO due to any of these reasons and more can be of great consequence to the CEO. It might result in loss of current income, forfeiture of stock

options, and loss of reputation which can affect future job prospects. The existing literature Dikolli et al (2014) on the association between CEO employment risk (sometimes called likelihood of CEO turnover)[13] and firm performance posits an inverse relationship. This is premised on the notion that the best way to observe CEO's ability is through the firm's performance. Hence, it is suggested that poor firm performance will result in CEO dismissal.

The decision to hire and fire a CEO is an important decision that can affect the value of the firm the responsibility of which rest with the board of directors. Since the board of directors is not involved in the daily running of the organisation, they therefore, rely on either accounting and/or market-based performance measures to make their decisions. Hemalin and Weisbach (1998) suggest that a firm's stock price is a reflection of the market's belief of the CEO's continued employment. In examining the relationship between CEO turnover and firm performance, Jenter and Lewellen (2015) assert that CEO turnover probability depends on the sample and performance measures used. They suggest that forced CEO turnover is higher and ranges between 2% and 6% for poorly performing firms than for top performers. In a related study, Farell and Whidbee (2003) investigates the role of performance expectations on CEO dismissal and cautions that the usefulness of performance measures in the design of executive pay depends on the amount of information such performance measure produces on the CEOs ability. Farell and Whidbee (2003) assert that rather than focus on performance as a result of CEO dismissal, an important factor that can influence CEO dismissal is analyst forecast of expected performance. Particularly, the study reveals that board of directors not only use performance measures in determining CEO dismissal, but they also rely on the performance expectations as part of the decision-making process. In conclusion, Farell and Whidbee (2003) note that the likelihood of dismissal is higher for CEOs with negative analyst forecast and when there is increased scrutiny of poor firm's performance by the press. Campbell et al

[13] CEO employment risk and CEO turnover are used interchangeably.

(2011) examine the likelihood of CEO dismissal from a rather novel perspective. They suggest that employment risk is higher for CEOs with relatively low optimism and those with relatively high optimism, but that CEOs with moderate optimism face lower employment risk. Contrary to these findings, Czraki and Xu (2014) show that the likelihood of CEO employment termination has little or no effect on stock returns or accounting profitability. Kaplan and Minton (2012) study how CEO turnover varies with firm performance, they find that internal turnover (where the CEO is replaced by someone within the organisation) is related to three aspects of firm stock performance; performance of the firm in relation to the industry, the performance of the industry in relation to the market and the overall stock market performance. They assert that changes in CEO turnover and turnover-performance sensitivity is driven by increasing number of blockholders and board independence. The study, however, finds no evidence supporting external turnover and stock performance.

Denis, Denis, and Sarin (1997) examine the effect of top executive ownership on turnover while controlling for firm performance. They assert that the likelihood of executive job termination is greater for poorly performing firms with low executive stock ownership than for firms where the executive owns a good proportion of the firm stock. Denis et al (1997) also note that the sensitivity of turnover to performance is greater in firms with outside blockholders than those without blockholders. Taken together, the findings of the study suggest that executive ownership may act as a shield against dismissal even in the face of poor performance because there is reduced board monitoring when ownership is high. Agrawal and Nasser (2012) analyse the role of blockholders who are independent directors on the CEO turnover-performance sensitivity. They find that the presence of blockholders who are independent directors and having voting seats have higher CEO turnover-performance sensitivity. This is because such blockholders have vested interest which they protect by monitoring the activities of the CEO and executives so that if performance is not as

expected, the likelihood of dismissal increases. The study concludes that the presence of blockholders on the board promotes better contracting with the CEO and effective monitoring which results in higher firm valuation.

In an attempt to deviate from the usual in prior research which focus only on public firms' Coles et al (2003) compares CEO turnover-performance sensitivity as well as profitability in private and public firms. The study shows that there is no difference in CEO turnover sensitivity in the two samples but notes that private firms are more profitable than public firms. In a similar study, Gao, Haford and Li (2012) examine the turnover–performance sensitivity of private firms in the US. They compare their results with that of public firms and find that public firms exhibit higher CEO turnover rate than private firms, and that there is greater turnover-performance sensitivity in public firms which they attribute to 'investors myopia', lower replacement cost for CEOs in public firms, more media analyst coverage, quality of accounting information and governance differences. They find no evidence that CEO turnover- performance sensitivity is a possible way to align the interest of managers and shareholders. Following the same direction, Lel, Millen and Reisal (2014) compare private and public firms in the European Union. They find that public firms are more likely to dismiss poorly performing CEOs than private firms and unlisted firms. Lel et al (2014) assert that one of the factors facilitating high turnover – performance sensitivity in public firms than private firms is the market for corporate control and scrutiny of the stock markets. The study concludes that contrary to previous beliefs, that the agency problems in public firms are not as anticipated and that the stock market has a great governance role in limiting managerial entrenchment.

DeFond and Park (1999) compares the rate of CEO turnover in high and low competition industries, they find that CEOs in highly competitive industries face higher termination risk. The study suggests that the use of relative performance evaluation (RPE) improves board of

director's ability to identify under-performing CEOs, thus concluding that RPE based on accounting measures are more closely associated with CEO turnover in high competition industries than in low competition industries.

Some studies have considered the effect of corporate governance mechanisms on the CEO and other executive's employment risk. For example Jensen (1993) asserts that the combination of the roles of CEO and chairman undermines the essence of internal control mechanisms. This is because the combination of both roles in one person makes it "extremely difficult for the board to respond to failure in its top management team", (Jensen, 1993). Goyal and Park (2002) confirms this by examining a case of 455 actual CEO dismissal from 1992-1996. They find that CEO turnover is significantly less sensitive to firm performance in firms that combine the role of CEO and chairman. The study concludes that boards which combine the two roles are less effective in monitoring or replacing CEOs when there is a need to do so. As regards board independence and board size, Weisbach (1998) finds that CEOs of companies where the board is dominated by independent directors face high turnover-performance sensitivity. While Yermack (1996) finds that the threat of dismissal increases as board size decreases. He also finds that there is a negative relation between CEO dismissal and the number of stocks owned.

The flexibility of accounting methods provided by GAAP (Generally Accepted Accounting Principles) has also been observed to affect CEO turnover. For example, Fundenberg and Triole (1995) assert that executives or managers faced with career concerns and the possibility of losing their job engage in income smoothing activities. Similarly, the findings of Defond and Park (1997) confirm that job security gives managers incentives to smooth earnings. Based on the idea that poor performance will lead to dismissal, they find that managers with current poor earnings who anticipate good earnings in the future engage in income smoothing such that the CEOs "borrow" earnings from the future for use in the

current period, and the reverse is the case for good current earnings when poor performance is anticipated. Ahmed, Lobo and Zhou (2006) identify conditions that are likely to lead to greater concern for job security for managers. The study reveals that; competition, product durability, and revenue volatility expose managers to the likelihood of dismissal. To save their jobs, managers in such firms employ significantly more negative / positive discretionary accruals to smooth income depending on the current performance of the firm and expected future performance.

Following from the above analysis, it is obvious that the threat of dismissal or job termination produces different behaviours in CEOs. However, we do not know the effect of background risk on firm performance. But from background risk theory, we can argue that employment risk will lead to risk aversion which reduces risk taking and therefore, poor firm performance. We therefore propose that;

Hypothesis 1a: There is a negative relationship between employment risk and firm performance

While the extant literature provides evidence on the association between CEO compensation and firm performance, we do not know the indirect effect of background risks such as employment risk on the relationship between CEO compensation and firm performance. The background risk theory by Kimball (1993) asserts that the presence of an additional risk known as background risk would result in risk aversion. Hence, we argue that the risk associated with the compensation coupled with employment risk will lead to risk aversion and therefore, poor firm performance. This is because the consequence of actual job loss is of serious concern to the CEO. So that confronted with employment risk, the CEO might become risk averse by refraining from risky positive NPV projects, which might result in poor firm performance. By decoupling compensation into CEO delta and CEO cash compensation, we propose that;

Hypothesis 1b: In the presence of background risk (employment risk), there will be a negative relationship between CEO delta and firm performance.

Hypothesis 1c: In the presence of background risk (employment risk), there will be a negative relationship between CEO cash compensation and firm performance.

4.3.2 Background Risk (Tenure) and Performance

In this section, we examine the second measure of background risk which is CEO Tenure. This is measured as the time in role as a CEO. We examine tenure as a background risk because long-tenured CEOs have short career horizon and short tenure can be risky to the CEO because this is a learning phase for the CEO and the board may not be patient to retain a new CEO if he fails to meet the expectations of the board. Based on this idea ceteris paribus, it is expected that the number of years a CEO has spent in the role can directly determine the performance of the organisation as well as indirectly, through the CEOs compensation. It is assumed that the performance of any organisation is a reflection of its managers and their actions. If the CEO is such that he is constantly motivated to increase firm performance, then decisions taken would be performance driven. On the other hand, if the CEO is motivated by power through increasing market share or diversification or to gain prestige or popularity, then decisions taken would be geared towards such motivation. Hence, early studies like Hambrick and Mason (1984), Cyet and March (1963), Gupta and Govindarajan (1984) argue that most firms are a reflection of their directors which can be observed from performance measures.

Hambrick and Fukutomi (1991) provide a vivid explanation of how CEO paradigms evolve through their tenure and how this affects future firm performance. They suggest that at lower tenure, few years after appointment, CEOs learn about the firm and begin to develop their beliefs and methods of running the firm. After this time, CEOs are well knowledgeable about the firm and have a fixed way of doing things so that they become less willing to change their strategy. In the same way, information they (CEOs) receive from subordinates are filtered to

what the CEO expects, and as such when this behaviour is carried on into later years, the CEO become obsolete in his management method which can adversely affect firm performance, (Miller, 1991; Bertrand and Mullainathan, 2003).

The link between CEO tenure and performance has been relatively unexplored, mainly with the use of tenure as a control variable. Also, CEO tenure has often been used as a proxy for power. According to Bebchuk and Fried's (2004) entrenchment hypothesis, CEO tenure is a breeding ground for power, so that as tenure increases, CEO becomes more powerful to the extent that they can influence their pay and make it less sensitive to firm performance. Entrenchment hypothesis, therefore, proposes a positive relationship between CEO pay levels and tenure but a negative relationship between pay-performance sensitivity and tenure (Cremers and Palia, 2011). On the other hand, tenure as a proxy for power can arise from firm-specific wealth accumulation. While some studies like Daily and Johnson (1997) use tenure as a proxy for power in the sense that longer tenure results in the accumulation of firm based wealth, ownership (in the form of stocks) then exudes power. Jensen and Meckling(1976) concludes that it is likely that the effect of such power becomes positive resulting in better firm performance. For example Mehran (1995) finds a positive relationship between firm performance and the percentage of equity held by executives and the percentage of the compensation package that is equity based.

Hambrick and Fukutomi (1991) argue that the relationship between executive tenure and performance is non-linear. In examining a general setting of CEOs, Hambrick and Fukutomi argue that there are five discernible phases in a CEO's tenure; response to mandate, experimentation, selection of enduring theme, convergence, and dysfunction. They assert that the performance level of a firm depends on the phase at which the CEO is in. Huang (2013) in a study of US firms in a more recent period from 1998-2010 examines the effect of the board tenure on firm performance. The study provides evidence of an inverted "U" shape

relationship between board tenure and firm value. Particularly the study reveals that at board tenure of nine years, firm value reaches a maximum after which firm value begins to fall. In the same line of thought, Simsek (2007) suggest that CEO tenure indirectly influences firm performance through a direct influence of top management team (TMT) risk taking propensity and firm's entrepreneurial initiative.

Henderson, Miller, and Hambrick (2006) study two groups of CEOs, 98 from a relatively stable food industry and 228 from a highly volatile computer industry. They find a positive relationship between firm performance and tenure in the stable industry. But on the contrary, for volatile industries firm performance increases in the initial years of tenure, but as tenure increases, performance declines. Similarly, McClelland et al (2012) examine the effect of tenure and career horizon on future firm performance using a sample of US firms from the S&P 500. They find that longer CEO tenure results in negative future firm performance in dynamic industries, but this was not the case for stable industries. In addition, the study reveals that shorter career horizons (shorter years to retirement) combined with large ownership leads to poor firm performance. In a related study but different industry, Miller and Shamsie (2001) examine how the tenure of top executives of Hollywood studios affects financial performance. They conclude that executive tenure has a U-shape relationship with performance. The findings of Miller and Shamsie (2001) suggest that due to learning and experimentation at the early stages of tenure, performance is usually poor, but as knowledge increases experimentation declines and performance increases. However in later years of tenure, experimentation further declines due to maintaining the status quo which results in poor performance. They argue that such decline is as a result of outdated standards of long-tenured CEOs.

In an attempt to find a link between CEO pay and stock returns, Hill and Phan (1991) opine that the ability for CEOs to influence their pay through the board of directors increases with

CEO tenure. The study reveals that the relationship between CEO pay and cash compensation reduces as tenure increases. However, the relationship between cash compensation and firm risk and firm size increases with tenure. The study, however, focuses on cash compensation which has a lower proportion compared to stocks and options in the compensation package. As noted by Perry and Zenner (2001) CEOs compensation package has changed from the focus of cash compensation to stocks and options grant including restricted stocks since the 1990s, therefore, any research focusing on only cash compensation could be misleading.

In the light of the above analysis, as suggested by Gibbons and Murphy (1992) that as CEOs approach the end of their tenure, there is increased sensitivity of pay to performance. Hence, we predict that increasing CEO tenure will result in poor firm performance resulting from risk aversion, maintaining the status quo and obsolete ideas. Stating this hypothetically;

Hypothesis 2a: There is a negative relationship between background risk (tenure) and firm performance.

From the background risk theory Kimball (1993) we find that an additional risk will result in risk aversion. Hence, we predict that given the risk inherent in the compensation package, additional risk associated with increasing tenure, such as short career horizon would lead to risk aversion and therefore, poor firm performance. Stating thus;

Hypothesis 2b: In the presence of background risk (tenure), there would be a negative relationship between CEO compensation delta and firm performance.

Hypothesis 2c: In the presence of background risk tenure, there would be a negative relationship between CEO cash compensation and firm performance.

4.4 Measures of Firm Performance

It is the desire of investors, stakeholders as well as those with a vested interest that the firms in which they invest in are profitable so that they can get good returns on their investment. The key avenue to measure if a particular company provides returns on its shareholder's

investment is to examine its performance using some known or arbitrarily set targets. The finance and management literature has often relied on two methods of firm performance; accounting-based methods and market-based methods. While both have its advantages as well as disadvantages, the use of any as a measure of performance depends on the purpose of the performance evaluation.

Early studies (Murphy, 1986) argue that the use of accounting measures of performance is more appropriate than market-based measures. This is because, accounting measures are thought to be backward –looking as they assess the performance of management according to how efficient the firm's resources have been employed to produce value for shareholders. This backward-looking process helps to understand if firm resources have been efficiently utilised to provide value for shareholders and how it can be improved. The use of accounting methods presents some useful advantages like; the ease at which they can be applied and interpreted, they are easily verifiable and are less affected by factors beyond the firm's managers. As noted by Voulgaris and Doumpos (2000), most stakeholders are in agreement on the use of accounting measures since such measures can easily provide answers to pertinent questions on firm performance. Market-based measures of performance such as stock returns have also been used in the finance literature to measure firm performance (Core et al, 1999). This method has some advantage over accounting based measures such that it is not easily manipulated by management, it is not easily affected by the subjective use of accounting policies and it is forward looking since it represents investors' perception of a firm's future earnings ability. However, market measures such as stock returns are thought to incorporate factors that are beyond the control of management in their use as a performance measure (Klassen and McLaughlin, 1996). There are a number of accounting measures applied in the finance literature (Agarwal and Knoeber, 1996; Core et al., 2003; Ozkan, 2007; Coles et al., 2012; Lambert and Lacker, 1987; Conyon and Sadler, 2010) ranging from ROA,

ROE, RI, Asset turnover, EPS. In line with prior research and as noted by Barney (2011), studies that involve firm performance should be addressed from the viewpoint of 'multiple stakeholders' despite being more cumbersome. Therefore in order to fully analyse the effect of compensation and background risk on firm performance two performance measures are applied; ROA and Stock Returns (RI).

4.5 Research Design

4.5.1 Data and Sample Selection

The data sample[14] consists of firms making up the FTSE 350 index from 1997-2010 with the exclusion of financial firms. Financial firms are excluded due to the different accounting treatment of revenue and profits for financial firms such as banks, investment trust and insurance companies which are different from other types of companies. Also, such firms have special regulatory requirements like the capital structure with a minimum requirement for operation. And as such it would be inappropriate to compare financial decision made in financial firms with those of non-financial firms (see Adams and Mehran, 2005; Spong and Sullivan, 2007, Belghitar and Clark; 2012). Another factor used in the data selection criteria is that firms must have at least two consecutive years information in order to determine the CEO employment risk. Executive compensation data has been extracted from BoardEx. BoarEx is an independent company providing comprehensive information on executive remuneration for companies around the world. Firm-specific financial information, on the other hand, has been extracted from Datastream. Datastream provides current and historical time series data in ready to use form dating as far back as 1973. The FTSE 350 index has been chosen because companies listed in this index comprise of the largest companies on the LSE based on market capitalization. This study is focused on the CEO of the firm because they have more flexibility than other executives so that their actions or inactions may result in great consequences for the company. The primary responsibilities of the CEO include;

[14] The data source and sample selection criteria has been rewritten in this chapter for the ease of readers

decision making, setting the strategy of the company and shaping the organisational structure, therefore, they are mostly held accountable for the failure of the firm (Bertrand and Mullainathan, 2003). After applying the selection criteria, the total number of firms in the sample amounted to157 with an unbalanced panel of 1874 firm-year observations. Table 4.1 below shows the distribution of firms in the sample according to their sector. Following that is Table 4.2 which shows the variables extracted from the two data source and their definitions.

Table 4.1: Distribution of Firms by Sector.

INDUSTRY	NUMBER OF FIRMS	PERCENTAGE OF ENTIRE SAMPLE
Oil & Gas	9	6
Basic Materials	11	7
Industrials	47	30
Consumer Goods	20	13
Health Care	9	6
Consumer Services	41	26
Telecommunications	4	2
Utilities	4	2
Financials	0	0
Technology	12	8
Total	157	100

Table 4.2: Variable Names, Definition and Source.

Variables	Definition	Source
CEO Delta	CEO Delta is the £ change in CEO firm based wealth for a 1% change in firm stock price. Where firm based wealth includes all equity holdings, unexpired stocks and LTIPs options accumulated and held by the CEO to date. This is measured in thousands.	BoardEx

CEO Cash Comp	This is the sum of all cash based payment received by the CEO in a year. This comprises of; salary, bonuses, pension and any other cash payment.	BoardEx
Employment Risk	This is calculated as a dummy variable indicating 1 for two years consecutive decline in stock price coinciding with two-year decline in ROA	Authors' Calculation
ROA	This is the ratio of net income to total asset	Datastream
Stock Price	The value of the stock price as at fiscal year end	Datastream
Stock Returns (RI)	The average annual return on the stock	Datastream
CEO Tenure	The length of time that the CEO has been in the current role measured in years,	BoardEx
CEO Age	The age of the CEO in years	BoardEx
CEO Total wealth	This is the sum of equity held, estimated value of options and LTIPs held	BoardEx
Firm Size	Measured as the market capitalization	Datastream
Firm Risk	This is the volatility of the stock price	Datastream
Leverage	The ratio of long-term debt to capital	Datastream
Firm Cash	This is the sum of cash and cash equivalent as at fiscal year end	Datastream

4.5.2 Descriptive Statistics and Correlation Analysis

Table 4.3 below shows the descriptive statistics of the variables utilised for the analysis. It is observed that CEO delta has an approximate mean of 159 with a high standard deviation of

509. This means that for a 1% change in stock price, CEO compensation changes by £509. For cash compensation, the average CEO in the sample receives £896, 000 with the maximum cash compensation of £6m. For our measure of performance returns on asset (ROA), we find that the mean ROA is 8.8 while the maximum is 75. For RI (stock returns), the mean is 388 with a high standard deviation of 4497, suggesting that returns are highly skewed. The log transformation is utilised in the analysis. The average age of CEOs in the sample is approximately 52 years, with the youngest being 34 years and the oldest 77 years. CEOs in the sample have spent an average of 5 years in the position with the longest serving CEO having spent 34 years.

Table 4.3: Summary Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
CEO Delta	1823	159.137	508.581	0.000	12881.000
CEO Cash Comp	1874	896.353	704.907	0.000	6100.000
ROA	1855	8.802	9.030	-54.820	75.090
Stock Price	1864	5.947	1.050	0.223	16.696
Firm Risk	1648	27.099	8.462	10.740	71.220
CEO Total Wealth	1823	14.766	49.999	0.013	1288.069
Firm Size	1856	14.032	1.612	9.582	19.180
Firm Cash	1858	0.115	0.116	0.000	0.984
RI	1865	388.231	4496.829	1.240	136000.000
Leverage	1751	25.052	18.483	0.000	171.440
CEO Age	1867	51.799	6.300	34.000	77.000
CEO Tenure	1873	5.481	5.525	0.900	34.400

Note: For variable definitions see Table 4.2

The correlation matrix is presented in Table 4.4 below. We find that there is a strong correlation between CEO delta and CEO total wealth, suggesting that most of the CEO wealth are in the form of stock options. We find a negative correlation between CEO delta and CEO age but a positive correlation between CEO delta and CEO tenure. The correlation amongst the variables are particularly low, this means there is no concern of multicollinearity.

Table 4.4: Correlation Matrix.

		1	2	3	4	5	6	7	8	9	10	11	12
1	**CEO Delta**	1											
2	**CEO Cash Comp**	0.320	1										
3	**ROA**	0.126	0.082	1									
4	**Stock Price**	0.183	0.408	0.188	1								
5	**Firm Risk**	0.072	-0.158	-0.175	-0.223	1							
6	**CEO Total Wealth**	0.614	0.277	0.122	0.158	0.091	1						
7	**Firm Size**	0.138	0.495	0.040	0.356	-0.184	0.102	1					
8	**Firm Cash**	0.129	-0.002	0.058	0.023	0.222	0.134	-0.068	1				
9	**RI**	-0.002	0.021	0.019	0.072	0.004	-0.002	0.033	0.007	1			
10	**Leverage**	-0.107	0.036	-0.016	0.009	-0.071	-0.106	-0.060	-0.245	-0.011	1		
11	**CEO Age**	-0.046	0.124	-0.059	0.108	-0.086	-0.052	0.059	0.006	0.018	0.038	1	
12	**CEO Tenure**	0.193	0.067	0.060	-0.044	0.053	0.198	-0.073	0.035	-0.044	-0.064	0.308	1

Note: For variable definitions see Table 4.2

4.5.3 Model Specification

4.5.3.1 Fixed Effect Regression

The nature of the data obtained for this study is such that it is a combination of time series and cross-sectional data, thus, providing a panel data. Therefore, the assumptions of ordinary least squares estimation (OLS) cannot be fulfilled in such a situation because OLS ignores the individual firm-specific characteristic and as such pools the entire firm together as the same. The use of OLS will, therefore, yield biased results. This is because a potential problem in our estimation is that of endogeneity. Endogeneity exists where there is unobserved heterogeneity between the dependent and independent variables. To estimate such panel data, the use of fixed effect or random effect is most appropriate. The choice of either depends on whether the error term is uncorrelated with the dependent variables (Wooldridge, 2005; Gujrati, 2004). Accordingly we perform the Hausman (1978) specification test which shows ($p< 0.001$) that the fixed effect is most appropriate for the analysis. The log transformation of the variables has been utilised in the estimation process. The results of the fixed effect regression are presented in Tables 4.5. To estimate the fixed effect model, we state the following model;

$$Perf_{it} = \beta_0 + \beta_1 CEODelta_{it-1} + \beta_2 CEO\ CashComp_{it-1} + \beta_3 Background\ risk_{it-1} + \beta_4 Compensation_{it-1} * Background\ risk_{it-1} + \sum_{n=6}^{6} Control\ Variables_{itk} + \varepsilon_{it} \ \ldots \ (1)$$

Where;

Perf; is firm performance represented by ROA and RI,

k = number of control variables,

n=1,2,3…6.

Table 4.5: Basic Model using Fixed Effect Regression.

	EMPRISK(BGR1)				TENURE(BGR2)			
Dependent Variables (ROA, RI)	**ROA**		**RI**		**ROA**		**RI**	
	Model 1		**Model 2**		**Model 3**		**Model 4**	
	β	**t-stat**	**β**	**t-stat**	**β**	**t-stat**	**β**	**t-stat**
Independent Variables								
CEO Delta	0.090***	3.030	0.000	0.340	0.111***	3.690	0.050	1.610
CEO Cash Comp	-0.001**	-2.190	0.002***	5.400	-0.0001**	-2.220	0.002***	5.630
BGR1	-0.357***	-6.390	-0.019	-0.210				
CEO Delta x BGR1	0.000	-0.170	-0.007	-0.310				
CEO Cash Comp x BGR1	0.046***	5.510	0.018***	2.770				
BGR2					-0.015**	-1.990	-0.062**	-2.57
CEO Delta x BGR2					-0.000	0.530	-0.014	-0.920
CEO Cash Comp X BGR2					-0.003**	-2.430	-0.003	-0.350
Firm Risk	-0.018***	-2.880	-0.001	-0.160	-0.015**	-2.370	0.002	0.410
CEO Total wealth	-0.010	-0.370	0.042*	1.920	0.004	0.130	0.051*	1.810
Firm size	0.109**	2.220	0.715***	17.940	0.210***	4.250	0.742***	17.650
Firm Cash	0.775**	2.350	0.434	1.630	0.927***	2.750	0.512*	1.700
Leverage	0.004	1.630	0.002	0.950	0.002	0.890	0.002	0.890
CEO Age	-0.004	-0.020	-0.345*	-1.840	0.147	0.58	0.339	1.371
Intercept	0.129	0.11	-1.285	-1.350	-1.567	-1.260	-4.254***	-3.737
Observations	1188		1264		1184		1313	
R^2	0.1000		0.0507		0.0415		0.0378	

Note: the table shows the fixed effect estimation with dependent variables ROA and RI. The first part of the table is the estimation for employment risk (BGR1) while the second part is for Tenure (BGR2) as background risk. All variables are defined in Table 4.2. For convenience, the t-statistics has been placed in a column. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively

4.6 Empirical Results and Analysis

4.6.1 Fixed Effect Analysis

In this section, we begin the preliminary analysis with fixed effect regression in order to examine the effect of background risk (Employment risk and Tenure) on firm performance. The use of standard OLS cannot control for the unobserved heterogeneity that exists amongst the firms and CEOs in the data. This is a source of potential endogeneity problem and a cause for concern. Hence, we proceed with the use of fixed effect regression after conducting the Hausman (1978) specification test which shows that the fixed effect is most appropriate. Table 4.5 presents the results of the fixed effect regression using ROA and RI as measures of firm performance which are the dependent variables. Model 1 is estimated using ROA as the dependent variable while Model 2 is estimated using RI as the dependent variable. The table has been divided into two parts with different estimation for the two types of background risk. As shown in Table 4.5 Model 1, the coefficient of CEO delta is positive and statistically significant at the 1% level, this indicates that as CEO delta increases, firm performance increases. More specifically, there is an increase in return on asset by 9% for every percentage increase in CEO delta. To establish this result more firmly, we re-estimated the model with an alternative measure of firm performance, Stock Return (RI). The results for RI in Model 2, is positive but not significant. We find same statistically positive results for ROA in Model 3. Although the results for RI is positive, this is however not statistically significant. For CEO cash compensation, we find that the results for ROA in both Models 1 &3 are negative and statistically significant. But RI in Models 2 & 4 exhibits significant positive coefficient. Next, moving to the proposed hypothesis, we examine the effect of background risk on firm performance. As expected, we find that there is a negative relationship between firm performance and employment risk in Models 1 & 2. But the result for RI in Model 2 is not significant. For Models 3 & 4, we find statistically significant results for

background risk tenure. This is as expected because background risk leads to risk aversion so that CEOs faced with high employment risk will become risk averse and reduce risk taking which results in poor firm performance. Going further to the interaction effect, we find that the interaction of CEO delta and background risk in Models 1 & 2 is negative but not statistically significant and the magnitude of the coefficient is minimal. Thus, we do not find evidence of the effect of employment risk on the relationship between CEO delta and firm performance. To examine the effect of employment risk on CEO cash compensation and firm performance, we interact CEO cash compensation with employment risk in Models 1&2. Contrary to expectation, the results show statistically positive results. This suggests that in the presence of background risk such as employment risk, CEO cash compensation as a source of diversification will provide motivation for risk taking which will lead to better firm performance. Since cash compensation allows for diversification of CEO wealth, CEOs are therefore more willing to take more risk which can improve firm performance. Next, the effect of CEO Tenure as a background risk is presented in Table 4.5 Models 3 & 4. We find that as expected, CEO Tenure (BGR2) exhibits a statistically negative relationship with performance in both Models. Again suggesting risk aversion in the presence of background risk. The interaction of CEO delta and Tenure shows statistically negative results also in support of the background risk theory. Contrary to the results for employment risk, we find that the interaction of CEO cash compensation and BGR2 is negative and insignificant.

4.6.2 Dynamic Panel GMM Estimation[15]

Although fixed effect regression can resolve the bias of unobserved firm heterogeneity, there are some other types of endogeneity that the fixed effect estimation cannot handle. Wintoki et al. (2012) assert that apart from the endogeneity problem arising as a result of unobserved factors

[15] This section has been repeated in this chapter as it relates to firm performance for the ease of readers.

that affect both dependent and independent variables, another source of potential endogeneity in the finance literature is that of simultaneity. This occurs when there is reverse causality between the dependent and independent variables, (Berger and Patti, 2006). In this case, we assume the amount of compensation paid to CEOs affects firm performance. However, it is possible that firm performance can affect the amount of compensation received by executives. Hence, firm performance and compensation are simultaneously determined. Any results obtained from OLS and fixed effects regression would be biased. Although previous research (Black et al. 2006; Eisenberg et al, 2008; Rajgopal, and Shevlin, 2002, Demsetz and Villalonga, 2001, Coles et al , 2008), has attempted to control for endogeneity by using lagged independent variables as well as two & three stage least squares, results have remained inconclusive. This might be because the two or three stage least square requires finding suitable/ valid instruments outside the model which could be burdensome. It is also more difficult in the case of this research that involves interaction variables. To solve the problem of simultaneity and the problem of finding suitable instruments, Wintoki et al (2012) suggest the use of dynamic panel GMM estimation. This estimation method was first proposed by Arellano and Bond (1991) and then developed by Arellano and Bond (1995) and Blundell and Bond (1998). Although it has been applied in a few studies (Lodh, Nandy and Chen, 2014; Belghitar and Clark, 2012; Ozkan, 2007) examining family ownership, corporate governance, and firm performance, to the best of my knowledge this has not been applied in the performance and executive pay studies as it relates to background risk.

There are two steps in the dynamic GMM estimation process, (1) a first difference of the model is estimated which eliminates the problem of time invariant unobserved heterogeneity. (2) In employing a GMM framework, the lagged values of the explanatory variables are used as instruments for current explanatory variables whilst also including the lagged value of the

dependent variable[16]. These instruments are assumed to be exogenous. In this second step, the first differenced variables are used as instruments to construct a system of equations in levels. Because the GMM estimator controls for time-invariant unobserved heterogeneity and simultaneity it is suggested to produce a more efficient result.

$$Perf_{it} = \pi_0 Perf_{it-1} + \beta_1 CEODelta_{it} + \beta_2 CEO\ CashComp_{it} + \beta_3 Background\ risk_{it} + \beta_4 Compensation_{it} * background\ risk_{it} + \sum_{n=6}^{6} Control\ Variables_{itk} + \varepsilon_{it} \quad \ldots\ldots \textbf{(2)}$$

Where;

Perf; is firm performance represented by ROA and RI.

n= no. of control variables

k= 1,2,3…6

Due to the bias that may result from the use of a small sample, we employ the two-step GMM estimator (as suggested by Windmeijer, 2005) in the estimation process. The log transformation of the variables has been utilised in the analysis.

4.6.3 Empirical Results with Dynamic GMM Model for BGR1 (Employment Risk).

We begin by analysing the results for our first background risk measure; employment risk using the dynamic GMM estimation. Table 4.6 presents the estimation results for ROA and RI as dependent variables in Models 1 & 2 respectively. The positive and significant effect of the lagged dependent variables in both models shows that there is significant persistence in our measure of firm performance and validates the use of dynamic GMM estimation. That is, past values of firm performance measured by ROA and RI does affect current values of firm performance. In Table 4.6 Model 1, we find that there is a statistically positive relationship

[16] Lagged values of dependent variables are included in the model because it is assumed that there is a dynamic relationship between the current values of the independent variables and the dependent variable (Wintoki et al. 2012).

between CEO delta and firm performance ROA; β= 0.21, p≤ 1%. The result supports the agency theory that when executives are compensated with options of the firm, it serves to align the interest of executives and shareholders. Thus, a higher CEO delta results in better firm performance. In our re-estimation with RI in Model 2, we find the same positive results β= 0.11, p≤ 5%. This is as expected, because greater sensitivity of CEO stock options to stock price will motivate CEOs to work hard to improve stock price which increases the value of their portfolio and as a consequence better firm performance. This is consistent with the studies of Belghitar and Clark (2015) which provides evidence that CEO delta helps to align the interest of managers and shareholders. Also, Mehran (1995) finds that there is a positive relationship between firm performance and the percentage of equity held by managers and the percentage of compensation that is equity based. On the other hand and contrary to expectation, we find that CEO cash compensation has a statistically negative relationship with firm performance in both Models 1(β= -0.000, p≤ 1%) and 2 (β= -0.000, p≤ 10%). One may connect this result to the fact that, cash compensation leads to diversification outside the firm (Belkhir and Boubaker, 2013; Guay, 1999) hence, when cash compensation is high, CEOs do not exert as much effort which could lead to poor firm performance.

Moving on to our hypotheses, hypothesis 1a predicts that there is a negative relationship between employment risk (BGR1) and firm performance. We find support for this hypothesis in both Models with statistically negative coefficients. We find that in Table 4.6 Model 1, there is a statistical negative relationship between background risk (BGR1) and firm performance, (β= -0.438, p≤ 1%). The estimation with RI confirms the results, with a greater coefficient (β= -1.650; p≤ 1%). This indicates that for a given level of employment risk performance measured by ROA will drop by 0.438 and for RI by 1.650. The results suggest that CEOs affected with high

employment risk may become risk averse by taking less risky decisions which result in poor performance. Indeed, consistent with previous research, Dikolli et al (2014) find an inverse relationship between CEO turnover and firm performance.

Next, we proceed to analyse the indirect effect of background risk (BGR1) on the relationship between CEO compensation and firm performance. To do this, we decompose compensation into CEO delta and CEO cash compensation. We first perform an interaction between CEO delta and employment risk (CEO delta x BGR 1). The coefficient on a given interaction term measures the degree of influence background risk has on the relationship between compensation and firm performance. Hypothesis 1b predicts that employment risk will result in a negative relationship between CEO delta and firm performance. From Table 4.6 we observe that there is a negative relationship, but this is however not significant in both Models 1 & 2, thus failing to support hypothesis 1b. To test hypothesis 1c, we interact CEO cash compensation with employment risk (CEO Cash Comp x BGR1). We find that there is significant negative relationship as expected, (Model 1, β= -0.177; p$\leq$ 1%; Model 2, (β= -0.181; p$\leq$ 1%). The results support hypothesis 1c. The negative coefficient of the interaction term indicates that employment risk induces a negative impact on performance given the CEO cash compensation. This supports the background risk theory of risk aversion in the presence of additional risk. The result is in tandem with the findings of Berger et al (1997) which suggest that cash compensation leads to entrenchment and reduced risk taking. Also, Belghitar and Clark (2014) shows that cash compensation leads to firm cash holding which is a sign of increased agency cost. High agency cost is often associated with poor firm performance.

To examine the effect of other factors that may influence firm performance, we include a number of control variables in the equation. The results in both Models 1&2 of Table 4.6 are generally

the same. We control for two CEO characteristics, CEO total wealth and CEO age. We find that CEO total wealth exhibits a negative relationship with firm performance; this indicates that as CEO wealth increases, firm performance decreases. A plausible reason might be that when wealth increases, CEOs take less risky value maximising firm decisions, which should increase firm performance. In other to avoid variation in their wealth, CEOs would stick to old practices which result in poorer firm performance. As suggested by Martin et al (2013), the desire to protect current wealth will lead to less risk taking and as such poor firm performance as positive NPV projects would be passed off. CEO age also exhibits a negative relationship with firm performance. This suggests that as CEO age increases, firm performance decreases. Again, as CEOs grow older, they become risk averse, and would rather stick to the status quo, without knowing that their ideas have become obsolete, thus leading to poor performance (see Gibbons and Murphy, 1992; Ryan and Wiggins, 2001). Regarding firm characteristics, we control for firm risk, which is measured as the volatility of stock price. We find that in Model 1 there is a negative effect of firm risk on performance, this means that as firm risk increases, there is a decline in firm performance. Although we find the same negative relationship in Model 2, the result is however not significant. Next, we control for firm size, as one would expect, we find statistically positive relationship between firm size and firm performance. The results suggest that due to the advantages of economies of scale, larger firms tend to perform better. Similarly, we find the same positive results for firm cash. The availability of cash ensures that positive NPV projects are accepted and implemented which in turn leads to better firm performance. Although the result in Model 1 is significant, we do not find significant results in Model 2 for firm cash. Lastly, we control for firm leverage, but we fail to find any significant results in both Model 1&2. Table 4.6 also reports the results of the specification test. While the first–order serial correlation AR (1) test is significant, the AR (2) test is not significant, which means we fail to

reject the null hypothesis of no second order serial correlation. The Hansen J test of over-identification is not significant, which means that we fail to reject the null hypothesis that the instruments employed are valid.

Table 4.6: Estimation with Employment Risk as Background Risk.

	Model 1	**Model 2**
Dependent Variables (ROA, RI)	**ROA**	**RI**
Independent variables		
ROA_{t-1}	0.347***	
	(5.29)	
RI_{t-1}		0.894***
		(10.25)
CEO Delta	0.213***	0.112**
	(2.99)	(1.97)
CEO Cash Comp	-0.000***	-0.000*
	(-3.06)	(-1.96)
BGR1	-0.438***	-1.650***
	(-5.09)	(-4.16)
CEO Delta x BGR1	-0.000	-0.000
	(-1.20)	(-0.01)
CEO Cash Comp x BGR1	-0.177***	-0.181***
	(-6.78)	(-3.11)
Firm Risk	-0.029**	-0.005
	(-2.24)	(-0.98)
CEO Total wealth	-0.183***	0.158**
	(-2.73)	(2.29)
Firm size	0.134**	0.138**
	(2.16)	(2.35)
Firm Cash	4.996***	0.509
	(5.13)	(0.99)
Leverage	0.002	-0.000
	(1.44)	(-0.22)
CEO Age	-1.791*	-0.213
	(-1.95)	(-0.35)
Constant	6.355	-6.641**
	(1.64)	(-2.07)
Observations	1140	1110
AR(1)	0.000	0.018
AR(2)	0.784	0.297
Hansen test	0.270	0.832

Note: The dependent variable is ROA for Model 1 and RI for model 2. All variables are defined in Table 4.2. The t-stats are in parenthesis. BGR 1 is background risk measured as employment risk. AR (1) and AR (2) are tests of first and second order serial correlation. Hansen test is a test of over identifying restrictions, under the null of instrument validity. The *t*-statistics is

in parenthesis. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively.

4.6.4 Empirical Results with Dynamic GMM Model for BGR2 (Tenure).

Table 4.7 presents the results for our second measure of background risk which is CEO tenure employing the dynamic GMM model. From theory, we know that the background risk being faced by the CEO can play a role in the relationship between firm performance and executive compensation. To examine this effect we interact tenure (BGR2) and both components of executive compensation; CEO delta and CEO cash compensation. To strengthen the evidence, we estimated our equation with two measures of firm performance, ROA and RI. Given the nature of our dependent variable, firm performance, we include lag firm performance to control for the effect of previous firm performance on current performance. We find that in both Models 1&2 of Table 4.7, the lagged dependent variable is positive and statistically significant (Model1: $\beta= 0.395$, $p\leq 1\%$; Model 2: $\beta= 0.870$; $p\leq 1\%$). This suggests the presence of significant persistence in the performance variable. To examine the direct effect of compensation on performance, we disaggregate our compensation measure into, CEO delta and CEO cash compensation. From Table 4.7, we find that there is a positive relationship between CEO delta and firm performance. As delta increases, CEOs are motivated to improve firm performance. We find that the results are statistically significant Model 1; ($\beta= 0.094$; $p\leq 5\%$), Model 2; ($\beta= 0.465$; $p\leq 1\%$). This result is in agreement with previous research like Belghitar and Clark (2015) and Mehran (1995). For our second component of compensation which is CEO cash compensation, we find statistically negative results in both Models 1 and 2 (ROA: $\beta= -0.000$; $p\leq 1\%$), (RI: $\beta= -0.000$; $p\leq 5\%$) respectively.

Moving on to the main hypotheses, we find that in line with hypothesis 2a, there is statistically significant negative relationship between CEO tenure (BGR2) and firm performance in both

Models 1&2, (β= -0.056; p≤ 5%); (β= -0.098; p≤ 1%) respectively. This indicates that for a given increase in tenure, performance measured by ROA declines by 5.6% and by 9.8% using RI as a performance measure. The results suggest that as tenure increases, CEOs become complacent, obsolete in their thinking and risk averse because they have acquired huge firm based wealth, thus leading to poor firm performance. The results lend support for hypothesis 2a. This is consistent with a recent study by McClelland et al (2012) where they suggest that longer tenure combined with large ownership results in poor firm performance. Miller and Shamsie (2001) also assert that performance decline as tenure increases due to CEOs maintaining the status quo.

Next, to examine the indirect effect of background risk on the performance-compensation relationship, we interact BGR2 with CEO delta (CEO delta x BGR2). From table 4.7, we find that the interaction of CEO delta and BGR2 shows a statistically negative result (Model: β= -0.047; p≤ 5%), (Model 2: β= -0.080; p≤ 5%). This result indicates that the presence of background risk induces a negative effect of CEO delta on firm performance. The findings provide support for hypothesis 2b. Because of the background risk being faced, CEO delta may not induce as much motivation to take risk which can improve firm performance. As suggested by the background risk theory by Kimball (1993), an additional background risk will lead to risk aversion which will manifest in poor firm performance. This is consistent with previous studies like Henderson et al (2006) and Huang (2013) which provide evidence of a decline in performance at later years of tenure.

Table 4.7: Tenure and Firm Performance.

Dependent Variables (ROA, RI)	**ROA**	**RI**
	Model 1	**Model 2**
Independent variables		
ROA_{t-1}	0.395***	
	(10.32)	
RI_{t-1}		0.870***
		(8.18)
CEO Delta	0.094**	0.465***
	(2.32)	(3.10)
CEO Cash Comp	-0.000***	-0.000**
	(-3.48)	(-2.24)
BGR2	-0.056**	-0.098***
	(2.14)	(-3.12)
CEO Delta x BGR2	-0.047**	-0.080**
	(-2.20)	(-2.10)
CEO Cash Comp x BGR2	0.029**	0.080**
	(2.29)	(2.41)
Firm Risk	-0.013***	-0.027
	(-3.75)	(-1.10)
CEO Total wealth	0.071**	0.161*
	(2.05)	(1.76)
Firm size	0.045	0.083*
	(1.62)	(1.89)
Firm Cash	0.951**	1.145*
	(2.38)	(1.75)
Leverage	-0.000	-0.000
	(-0.33)	(-0.60)
CEO age	-0.594***	-1.297*
	(-2.81)	(-1.72)
Intercept	2.327*	4.807*
	(2.60)	(2.46)
Observations	1112	1119
AR(1)	0.000	0.002
AR(2)	0.364	0.313
Hansen test	0.272	0.165

Note: The dependent variable is ROA for Model 1 and RI for model 2. All variables are defined in Table 4.2. The t-stats are in parenthesis. BGR 2 is background risk measured as CEO tenure. AR (1) and AR (2) are tests of first and second order serial correlation. Hansen test is a test of over identifying restrictions, under the null of instrument validity. The *t*-statistics is in parenthesis. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively

Moving on to CEO cash compensation, we find that the interaction with BGR2 (CEO Cash Comp x BGR2) in Table 4.7 exhibits a statistically positive relationship with firm performance

for Model 1, (β= 0.029; p≤ 5%), Model 2, (β= 0.043; p≤ 5%). This result fails to support hypothesis 2c. The results contrary to expectation may indicate that the presence of background risk will lead to a positive relationship between CEO cash compensation and firm performance. This might suggest that cash compensation provides an avenue for CEOs to diversify their capital, so that the effect of background risk may exert little influence on risky investment decisions hence decisions made will lead to better firm performance. The results find support from previous research like Simsek (2007) who provides instances where position tenure results in better firm performance.

Table 4.7 also shows the results of the control variables included in the models. We include CEO total wealth to examine how CEO total wealth affects firm performance. We find that CEO total wealth has a statistically significant positive result with firm performance, thus suggesting that as CEO wealth increases, there is motivation to improve firm performance in line with agency theory. We also consider CEO age as this may play an important factor in firm performance. Contrary to expectation, CEO age shows a significant negative relationship in both Models 1&2. One reason for this could be that older CEOs have less tolerance for risk so that they pass off risky positive NPV projects that would otherwise have resulted in better firm performance (Child, 1974; Taylor, 1975). However, some research Chok and Sun (2007) use age as a proxy for experience and show that CEO age exhibits a positive relationship with firm performance. Table 4.7 also shows the effect of some firm characteristics on performance. Firm risk measured as the volatility of stock price shows statistically negative results in Model 1. However the results in Model 2 though negative is not statistically significant. We also introduce firm size; the results indicate that firm size has a positive relationship with firm performance, thus supporting the view that larger firms have more resources and greater market power and economies of scale

which can result in better firm performance. Next, as expected, firm cash exhibits positive significant results with performance, higher cash availability means that the firm is able to invest in projects that will increase firm value and firm performance. Leverage, on the other hand, has no significant effect on firm performance. This is contrary to expectation. Table 4.7 also reports the results of the specification test. While the first–order serial correlation AR (1) test is significant, the AR (2) test is not significant, which means we fail to reject the null hypothesis of no second order serial correlation. The Hansen J test of over-identification is not significant, which means that we fail to reject the null hypothesis that the instruments employed are valid.

4.7 Robustness Tests

In this section, further robustness tests are done to guarantee the validity of the results earlier obtained in the previous section. First, we employ and an alternative measure of firm performance. While some studies have criticised the use of accounting measures of performance such as ROA that it is backwards looking, Tobin's q has been used as a measure of performance because it is forward looking and captures the value of the firm as a whole rather than the sum of its parts. Following Berger and Ofek (1995) & Dezso and Ross (2012) we use Tobin's q as an alternative method of firm performance. This is defined as "the ratio of the market value of a firm's asset to their replacement value" Tobin (1969). The results for both background risks using the dynamic GMM estimation are presented in Table 4.8

Secondly, given that the period of study covers a time when there was financial crisis, we removed the years from 2007- 2010 to observe if background risk presents a different effect in years without crisis. The results are presented in tables 4.9 and 4.10. Though the sample is reduced, the results obtained remain qualitative the same as those in tables 4.6 and 4.7 (except for the interaction with CEO cash compensation and employment risk which is positive when

using ROA as performance measure. This could be that before the crisis, cash compensation was very high so that there is greater incentive to engage in risk taking activities to improve firm performance.). This means that background risk presents the same effect on firm performance in both periods of economic downturn and economic boom.

Table 4.8: Robustness Test: Dynamic GMM Estimation with Tobin's q

	BGR 1	**BGR 2**
Dependent Variables (Tobin's q)	**Tobin's q**	**Tobin's q**
Independent variables		
Tobin's q_{t-1}	0.542***	0.480***
	(7.50)	(6.42)
CEO Delta	0.032**	0.027*
	(2.34)	(1.88)
CEO Cash Comp	-0.000**	-0.000**
	(1.98)	(-2.10)
BGR1	-0.294**	
	(-2.51)	
CEO Delta x BGR1	-0.000	
	(-0.39)	
CEO Cash Comp x BGR1	-0.050***	
	(-2.84)	
BGR2		-0.891***
		(-3.66)
CEO Delta x BGR2		-0.072***
		(-3.45)
CEO Cash Comp x BGR2		0.162***
		(3.84)
Firm Risk	-0.136	0.010**
	(-1.58)	(1.98)
CEO Total wealth	-0.019*	0.085***
	(-1.76)	(2.67)
Firm size	0.015	0.054
	(1.02)	(1.50)
Firm Cash	-0.749***	-1.613***
	(-3.51)	(-2.91)
Leverage	0.001**	0.000**
	(2.35)	(2.28)
CEO Age	-0.152	1.200**
	(0.64)	(2.24)
Constant	0.467	-4.074**
	(0.62)	(-2.05)
Observations	1264	1264
AR(1)	0.038	0.036
AR(2)	0.261	0.281
Hansen test	0.636	0.419

Note: The dependent variable is Tobin's q defined as the ratio of the market value of a firm's asset to their replacement value. BGR and BGR 2 are background risk variable; employment risk and CEO tenure respectively. All variables are defined in Table 4.2. The t-stats are in parenthesis. AR (1) and AR (2) are tests of first and second order serial correlation. Hansen test is a test of over identifying restrictions, under the null of instrument validity. The *t*-statistics is in parenthesis. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively

Table 4.9: Robustness Test: Estimation with Employment Risk as Background Risk (Pre-crisis).

	Model 1	Model 2
Dependent Variables (ROA, RI)	**ROA**	**RI**
Independent variables		
ROA_{t-1}	0.416***	
	(5.180)	
RI_{t-1}		0.913***
		(11.95)
CEO Delta	0.126*	0.083**
	(1.870)	(2.140)
CEO Cash Comp	-0.000**	-0.000*
	(-2.170)	(-1.790)
BGR1	-0.329*	-2.463***
	(-3.220)	(-3.480)
CEO Delta x BGR1	-0.000	-0.030
	(-1.490)	(-1.010)
CEO Cash Comp x BGR1	0.181***	-0.303***
	(5.510)	-2.770
Firm Risk	-0.006	0.006
	(-0.520)	(1.290)
CEO Total wealth	-0.076	0.015
	(-1.200)	(0.590)
Firm size	0.104	0.001
	(1.640)	(0.030)
Firm Cash	6.372***	0.201
	(5.610)	(0.340)
Leverage	0.001	-0.000
	(1.260)	(0.800)
CEO Age	-0.541	0.239
	(-0.520)	(0.362)
Constant	0.479	-1.419
	(0.110)	(0.183)
Observations	904	904
AR(1)	0.048	0.080
AR(2)	0.634	0.307
Hansen test	0.652	0.683

Note: The dependent variable is ROA for Model 1 and RI for model 2. All variables are defined in Table 4.2. The t-stats are in parenthesis. BGR 1 is background risk measured as employment risk. AR (1) and AR (2) are tests of first and second order serial correlation. Hansen test is a test of over identifying restrictions, under the null of instrument validity. The *t*-statistics are in parenthesis. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively

Table 4.10: Robustness Test: Estimation with Tenure as Background Risk (Pre-crisis).

	Model 1	**Model 2**
Dependent Variables (ROA, RI)	**ROA**	**RI**
Independent Variables		
ROA_{t-1}	0.277***	
	(3.090)	
RI_{t-1}		0.875***
		(11.480)
CEO Delta	0.074 *	1.426***
	(1.680)	(2.680)
CEO Cash Comp	-0.000	-0.000
	(-1.130)	(-3.120)
BGR2	0.118*	-0.409*
	(1.900)	(-1.870)
CEO Delta x BGR2	-0.133*	-0.050**
	(-1.730)	(-2.560)
CEO Cash Comp x BGR2	0.090**	.0415**
	(2.210)	(2.600)
Firm Risk	-0.027	-0.064*
	(-1.500)	(-1.940)
CEO Total wealth	0.177	-0.831*
	(0.960)	(-1.810)
Firm size	0.064	-0.103
	(0.660)	(-0-900)
Firm Cash	8.028***	1.326
	(6.580)	(0.810)
Leverage	-0.000	0.002
	(-0.280)	(0.820)
CEO Age	-1.587	-0.569
	(-1.640)	(-0.40)
Constant	5.039	8.407
	(1.220)	(1.390)
Observations	906	906
AR(1)	0.000	0.025
AR(2)	0.495	0.477
Hansen test	0.141	0.284

Note: The dependent variable is ROA for Model 1 and RI for model 2. All variables are defined in Table 4.2. The t-stats are in parenthesis. BGR 2 is background risk measured as CEO tenure. AR (1) and AR (2) are tests of first and second order serial correlation. Hansen test is a test of over identifying restrictions, under the null of instrument validity. The *t*-statistics are in parenthesis. *, **, *** represents significance at the 10%, 5% and 1% significance level respectively

4.8 Conclusion

This chapter presents a discussion of the outcomes of the empirical research using a quantitative approach which examines the relationship between background risk and firm performance as well as the effect of background risk on the relationship between executive compensation and firm performance. The study employed series of statistical test and estimation techniques such as descriptive statistics, correlation analysis, fixed effect regression as well as dynamic GMM estimation. This is done with the hope of analysing the extent to which background risk influences the decision making process of CEOs which in turn affects firm performance. The examination process also controlled for CEO characteristics as well as the characteristics of companies in the sample. The findings of the study are discussed in line with the predictions of the theoretical underpinnings adopted and conclusions are drawn based on the statistical results.

The investigation process started with a preliminary estimation which was preceded by a Husman test which suggests the used of fixed effect. The fixed effect method of estimation provides room for addressing endogeneity in our data which results from unobserved firm heterogeneity. The study, however, progressed to a more sophisticated estimation process which is the dynamic GMM that has the capacity to simultaneously cater for another form of endogeneity such as that of simultaneity and unobserved firm heterogeneity present in the data. To test the validity of results obtained, further robustness check was performed using an alternative method of firm performance. Also, we consider if the financial crisis period had any effect on the results obtained. The results of the robustness check remain qualitatively the same.

The findings of the study generally show support for the background risk theory in some instances. We find that both types of background risk; employment risk and CEO tenure results in poor firm performance, providing support for hypothesis 1a and 2a in line with background

risk theory. To test the intervening effect of background risk on the compensation performance relationship, we decomposed the compensation package into two components; CEO delta (representing the change in CEO firm based wealth for a 1% change in firm stock price) and CEO cash compensation. We find that the presence of background risk results in a negative relationship between CEO delta and firm performance. This affirms the predictions of background risk theory; that the presence of an additional risk when one risk has been committed to results in more risk aversion which reduces risk taking and consequently poor firm performance. We find the same negative relationship between cash compensation and firm performance for employment risk. But on the contrary, we find a positive relationship between cash compensation and firm performance for Tenure as background risk. This suggests that CEO cash compensation as a source of wealth diversification may not lead to risk aversion in the presence of tenure as a background risk. Taken together, since all but one of our hypotheses is supported, we find strong support for the background risk theory. In particular, we observe that the coefficient for employment risk is greater which shows that employment risk is of major concern to CEOs.

It is in the light of the foregoing that we recommend that policy makers determining the compensation package of executives especially the CEO, give consideration to the extent of background risk confronting the CEO because this has potential effect on decisions made and firm performance. Rather than concentrate on agency theory alone which suggest that compensating executives with options and stocks of the firm (so that executives become less risk averse), the board of directors in conjunction with the compensation committee should incorporate the effect of other potential sources of risk aversion such as background risk in determining executive compensation.

Like any research, this study is not without its limitations. For example, due to unavailability of data, the study covers only periods between 1997 and 2010. Incorporating more recent years can provide means for comparing results obtained before the recent financial crises and results after the financial crisis. Also, we have concentrated on public listed firms, but the difficulty of obtaining compensation data for CEOs in private firms prevented a comparison of results obtained with those from private firms. The existence of these limitations does not undermine the results obtained. It, however, serves as a starting point for future research.

CHAPTER 5: THE DETERMINANTS OF CEO BACKGROUND RISK: THE CASE OF EMPLOYMENT RISK

5.1 Introduction

The background risk confronting the CEO has been shown in previous chapters to have strong effect on the risk attitude of the CEO as well as the performance of the firm. As defined in previous chapters, background risk refers to any additional risk(s) being faced by the CEO in the presence of an inherent risk (Kimball, 1993). Background risk theory suggests that the presence of an additional risk (known as the background risk) often leads to risk aversion. There is a relatively large amount of research focusing on the effect of background risk on portfolio selection. For instance some studies (Pratt and Zeckhauser, 1987; Gollier and Pratt, 1996), based on the utility function of an individual investor, evaluate conditions whereby the presence of background risk make individuals less willing to bear any added risk, another stream of literature investigates the effect of background risk on optimal portfolio selection by investors using the mean-variance model (Jiang et al, 2010; Baptista, 2008) or expected utility framework (Heaton and Lucas, 2000). These studies however focus on individual investors who make decisions for themselves and will therefore bear the consequences of their decisions by themselves. The aim of this chapter is to examine the determinants of CEO background risk which have been shown to affect the CEO's risk taking behaviour and firm performance in previous chapters. This is because CEOs make decisions for a large group known as shareholders and also stakeholders, the consequences of which not only affect the CEOs' wealth but also the firm and all stakeholders. There are countless sources of background risk faced by the CEO as well as various determinants of such background risk. This chapter takes on this investigation from the aspect of corporate governance. The corporate governance systems in an organisation are expected to play a role in determining the degree of background risk affecting the CEO. This is

because the provisions of the system indirectly guide the decisions of the CEO. For example the Higgs (2003) report and Hampel (1998) report recommends that at least half of the board be comprised of independent directors. As stated earlier, the objective of this chapter is to examine the determinants of CEO background risk but with particular focus on employment risk. To the best of my knowledge there is no study that has empirically studied the determinants of CEO background risk.

CEO employment risk refers to the possibility or likelihood of being dismissed from office before the expiration of the contract. The actual removal of the CEO can result in serious consequences for the CEO such as loss of reputation, inability to find another job, and loss of future income. The existing empirical literature points to firm performance as a major determinant of CEO employment risk and consequent dismissal. These studies however, fail to view employment risk as a type of background risk faced by the CEO and hence fail to provide evidence of other determinants of CEO employment risk. With this in mind, this chapter aims to contribute to the existing literature on background risk by examining its determinants. The focus is on corporate governance mechanisms as determinants of background risk taking CEO employment risk as a case. In particular, we examine the board structure; board size, board independence and CEO network as determinants of background risk. While other studies like Jenter and Lewellen (2010) have focused on performance as determinants of CEO turnover, we have decided to view this from corporate governance perspective because of the continued call for better firm governance and the revisions of corporate governance codes in order to increase firm value and subsequent increase in shareholders returns.

The chapter is organised as follows; after this introductory section, 6.2 presents the literature review and hypotheses development. Sections 6.3 and 6.4 present the research design and model

specification respectively. To confirm the validity of results we perform a robustness check and present the results in section 6.5. The last section, 6.6 concludes the chapter.

5.2 Literature and Hypotheses Development

5.2.1 Board Size

The agency theory suggests that due to the separation of ownership of the firm from control, there is likely a conflict of interest between owners and managers to the extent that the decisions of managers become self-serving rather than for the interest of shareholders (Jensen and Meckling, 1976). To overcome this conflict of interest, advocates of agency theory suggest providing a monitoring mechanism in place in order to protect the interest of shareholders. One of such mechanism is the setting up of a board of directors comprised of individuals who are not connected with the day to day running of the firm. The board of directors are charged with the responsibility to oversee the activities of the executives who manage the affairs of the company on a daily basis and to stand as intermediaries between the executives and the shareholders to ensure that the interests of shareholders are protected at all times. The existing literature and governance codes do not provide a particular board number that is appropriate for any particular firm. While Jensen (1993) suggests that an optimal board is one comprised of seven to eight members. Lipton and Lorsch (1992) suggest that smaller boards are more effective as decision making takes shorter time. Raheja (2005) suggest that an optimal board size is dependent on the functions of the directors as well as the firm specific features. Nevertheless, a significant body of research has examined the determinants of board size. For example, Guest (2008) examines a large sample of UK firms from 1981-2002. The study reveals that board size is determined by the advising needs of the firm and not the cost and benefits of monitoring. Similarly, Chen and Al-Najjar (2012) in a recent study of Chinese firms observe that board size is mainly driven by the complexity of the firm. In a related study on board size, Linck et al (2008) investigates a

large sample of 7000 US companies from 1990-2004. They observe that the structure of the board is determined by the anticipated cost and benefits of the monitoring and advising roles that boards tend to provide. Linck et al finds that firms with more growth opportunities, high spending on R&D, and high stock return volatility do have small boards which are often less independent. But large firms have larger boards which are more independent. The results of the study provide further evidence that managerial ownership determines board size. Also in a recent study, Monem (2013) hand collected data on Australian firms to examine the determinants of board structure in a setting characterised by low litigation risk and high ownership concentration. The results of the study indicate that board size in Australia is determined by the size of the firm and high ownership concentration. They conclude that ownership concentration serves as an alternative corporate governance mechanism.

A substantial body of research has also examined the relationship between corporate boards and various aspects of the firm like firm performance, resulting in both positive and negative relationship. For instance, the relationship between board size and firm performance has been examined with divergent results emerging. Yermack (1996) provides evidence of a negative relationship between board size and firm performance. The study reveals that large boards are usually plagued with communication and coordination problems as well as increased agency problems which results in lower firm performance. In examining a sample of small and medium size firms, Eisenberg et al (1998) reveal that there is a significant negative relationship between board size and profitability. Similarly, Liang, Xu and Jirapon (2013) find that in a sample of the fifty largest banks in China, board size has a significant negative impact on firm performance. On the contrary, in a more recent study, Adams and Mehran (2012) examine the effect of board structure on bank holding companies in the light of the recent financial crisis. They find that

board size is positively related to bank performance. Pathan (2009) finds that strong bank boards especially those that are small and restrictive, affect bank risk taking positively.

Cheng (2008) examines the association between board size and the variability of corporate performance for US companies. The study provides evidence that larger boards have lower performance variability. The findings are linked to the idea that it takes much negotiation to reach an agreement within large boards. Therefore decisions made are less likely to be extreme, hence lower performance variability. Similarly, Nakano and Nguyen (2012) find that for Japanese firms with large boards, performance variability is low as well as lower bankruptcy risk. This is attributed to low cross-sectional variation in risk taking among Japanese firms. However they note that this effect is less significant for firms with large investment opportunities. Coles, Daniel and Naveen (2008) documents a U-shaped relationship between board size and firm performance measured as Tobins-Q. The results of the study suggest that firm performance increases when board size is increased for complex firms. They conclude that there is no standard board size for a firm. But that the size of the board should be determined by the needs of each firm.

Although most of the above studies concentrate mainly on the effect of board size on firm performance and the determinants of board size, an important yet unexplored consequence of board size is the effect of board size on the background risk faced by the CEO. We examine board size as a determinant of CEO background risk because of the power vested on the board as the apex body in a corporate establishment. The board is saddled with the responsibility to hire and fire the executives of the firm which includes the CEO with the recommendation of the nomination committee. The boards of directors are also charged with the responsibility of monitoring and advising managers on behalf of shareholders, (Jensen and Meckling 1976). It is

therefore imperative that the structure of the board may have an influence on the job security of the CEO. Some studies like Hazarika et al (2012) assert that boards are actually effective and proactive to the extent that they (the board of directors) replace managers who engage in aggressive earnings management even before it becomes public knowledge that such manager engage in earnings management. Yamack (1996) argues that large boards suffer from communication and coordination problems which heighten agency costs and results in poor firm performance. Hence we argue in the same line that due to the communication and coordination problems associated with large boards, there would be lower firm performance and hence high employment risk. Stating thus;

Hypothesis 1: The likelihood of CEO employment risk increases with firm's board size

5.2.2 Board Independence

A second aspect of the board structure that has been frequently examined in the literature is the composition of the board. Although some studies have analysed the structure of the board as regards to its diversity in terms of culture and expertise, age, gender etc., a vast majority has concentrated on the board independence as a determining factor in the functioning and performance of the firm. This is due to the increased call for better corporate governance mechanisms in corporation especially after the 1990 Polly Peck scandal in the UK, Enron debacle in 2001 and the recent financial crisis in 2008. Consequently, in the UK, the Hampel report (1998) and Higgs report (2003) recommends that at least fifty percent of the company's board be comprised of independent non- executive directors. In the US, the Sarbanes- Oxley Act of 2002 requires that majority of board members be comprised of independent directors and all audit committee members be independent directors. Also the Dodd-Frank Act 2010 requires all members of the compensation committee be independent directors. No doubt the recommendation of these corporate governance codes recognises the importance of independent

boards. The effectiveness of this recommendation is however predicated on some factors. For example, Duchin et al (2010) notes that recent regulation on board independence will only be effective and result in better firm performance when the cost of information acquisition is low. They show that when information acquisition is high, corporate performance declines when more outside directors are added to the board. Similarly, Koerniadi and Tourani-Rad (2012) examine the effect of independent directors on firm value. They argue that in line with stewardship theory and in an environment where managers are active partners with stakeholders, fewer independent directors results in increased firm value. Thus they conclude that board independence is of negative value to the firm.

Extant literature has attempted to provide evidence of a relationship between board independence and various aspects of the firm. Lu and Wang (2015) examine the influence of board independence on corporate investment decisions in the US. Consistent with the idea that independent board reduces agency problems, the study reveals that more independent boards are negatively associated with capital investment but positively associated with investment in research and development. Similarly, Dong and Gou (2008) examines the effect of corporate governance mechanisms on a firms' R&D investment decision. They find that the number of independent outside directors has a positive impact on R&D investment. In the same line, O'Connell and Cramer (2010) find positive relationship between firm performance and the number of independent directors on the boards.

In examining board independence from government ownership perspective, Chen (2015) finds that low government involvement in firms is associated with higher number of outside directors and better firm performance. However, on the contrary, Liu et al (2015) establish a significant positive relationship between board independence and firm performance in China. This

relationship is found to be stronger in government controlled firms and in firms with lower information acquisition costs. They conclude that the presence of more independent directors on the board improves investment efficiency and constrains insider-dealing. Similarly, Gupta and Fields (2009) examine the effects of the resignation announcements of board members on firm governance structure and stock market reaction. They find that the announcement of outside director resignation sends negative signals to stock market participants. But this reaction is less for firms that remain independent even after the departure of an independent director. This is especially so when there is high institutional ownership.

Some studies have toed a different line by investigating how board independence affects firm risk. For example Bradley and Chen (2015) examine the effect of board independence on the cost of debt. They find that board independence reduces the cost of debt when there are stringent credit conditions and when leverage is low, but the reverse is the case when credit conditions are poor and when leverage is high. They conclude that more independent boards encourage more risk taking which is beneficial to shareholders but not favourable to bondholders, thus increasing the agency conflict between shareholder and bondholder. Wang and Hsu (2013) examine the relationship between board composition and the operational risk events of financial institutions from 1996-2010. The findings reveal that the presence of a higher proportion of independent directors on the board reduces the likelihood of a firm suffering from fraud or failure to comply with professional obligation to clients. In relation to corporate failure, Hsu and Wu (2014) study the effect of board structure on the likelihood of corporate failure in the UK. They particularly differentiated between grey directors and independent directors. The study emphasises the importance of having grey directors[17] on the board. The findings reveal that the probability of

[17] Grey directors are directors who have some form of affiliation with the firm, they are sometimes called affiliated directors

corporate failure is lower for firms with higher proportion of grey directors when compared to independent directors. Hsu and Wu conclude that strict adherence to "independence" might not be beneficial to the firm. In a related study, Chen (2014) documents a non-monotonic relationship between board independence and the firm's credit rating. Chen argues that board independence only increases the credit rating for firms where board independence was previously low. He concludes that the result of the study is consistent with the cost and benefits of having more independent boards. The findings of the above studies suggest that independent directors do have a strong effect on the decisions of the firm and its riskiness.

Recently, there has been an influx of research on earnings management. Executives of poorly performing firms tend to engage in earnings management through the use of accounting practices in order to bolster current profit. In accordance with the rationale for corporate governance codes and practices, it is expected that independent directors would object to such practices, so that there would be a negative relationship between board independence and earnings management. Indeed, Setia-Atmaja et al (2011) show that for Australian family controlled firms, a higher proportion of independent directors on the boards (more independent boards) is effective in curtailing earnings management. Osma (2008) examines the effectiveness of independent directors in curtailing real earnings management. They assert that independent directors are effective at detecting and constraining management decisions with regards to unprofitable cuts in R&D spending. Also Marra et al (2011) finds that board independence and the presence of the audit committee reduces earnings management after the mandatory adoption of IFRS. They conclude that corporate governance mechanisms such as board independence help to improve earnings quality. Subsequently, Yekini et al (2015) investigates the link between board independence and the quality of community disclosures in annual reports. They find that more

independent boards are more likely to disclose higher quality information on their community activities than dependent boards. Contrarily, Park and Shin (2004) reveal that for countries like Canada where ownership concentration is high, and there is under-developed market for outside directors, board independence has no effect on earnings management. Relatedly, Chen et al (2015) notes that increasing board independence does not necessarily deter earnings management but that a reduction in earnings management influenced by independent directors is conditioned on information acquisition cost.

In relation to CEO turnover, Laux (2008) examines the effect of board independence on the CEO turnover. They analyse a situation where the CEO has private information about his ability which is of importance to the board in making decisions to replace underperforming CEOs. In such a case, the CEO would use such private information to extract rent. The study presents evidence that more independent board is positively related to voluntary CEO turnover, more generous severance package and larger stock option grant. Weisbach (1988) finds that there is a stronger relationship between prior performance and the probability of CEO voluntary resignation for companies with outsider-dominated boards than for firms with insider-dominated boards. They conclude that independent boards are more likely to replace poorly performing CEOs than dependent boards. Yawson (2006) provides evidence that more independent boards are more likely to give approval for layoff decisions when there is poor firm performance.

In the light of the following analysis, we observe that there is a general consensus for more independent boards. The advantage of which has been examined in most of the above studies. There is however no recent study that examines board independence as a determinant of CEO background risk taking employment risk as a case study. In line with Weisbach (1988) Laux (2008) and Yawson (2006), we argue that if independent boards are effective, and because they

do not have any vested financial interest in the firm apart from the directors' fee, they would prefer to preserve their reputation and do what is right which would lead to better firm performance. In the event that there is a continuous decline in firm performance, more independent boards are more likely to replace such poorly performing CEOs. We therefore propose that;

Hypothesis 2: The likelihood of CEO employment risk increases with increased board independence.

5.2.3 CEO Network

In any aspect of economic events, connections or networks whether socially or economically play a major role. This is because networks act as an avenue for information generation. The influence of such social and economic networks has been addressed in the fields of economics and sociology, (Larcker et al, 2013). The Finance and Management discipline is however not left out as connections are observed through corporate board membership. Pfeffer and Salancik (1978), pioneers of the resource dependency theory emphasise the need for firms to have links with important and external resources in order to reduce uncertainty. One way that firms can benefit from external resources is through directors' networks/connections, the impact of which has been related to firm performance (Larcker et al, 2013), firm operational efficiencies (Saeed et al, 2015), CEO compensation (Engelberg et al, 2013), take overs (Renneboog and Zhao, 2014), and acquisitions (Kramarz and Thesmar, 2013) etc. These literatures have however not considered how the CEO network may affect the background risk faced by the CEO, in particular the CEO employment risk. Prior research has often focused on poor firm performance as a major determinant of CEO employment risk, (Kaplan and Mitton, 2012). But a critical aspect of CEO turnover that is often neglected is that which relates to the CEO; the CEO connectedness or network. The term CEO connectedness or network refers to the number of boards the CEO has

served on or is currently serving on in both public and private firms. Although the Higgs report (2003) in the UK corporate governance code places some restrictions on cross directorship, it is still common to find that directors interlock in the boards of UK listed companies. One might assume that the strength of the CEO network size might pose an advantage to the CEO with respect to experience, information and outside appointments. However Liu (2014) suggests that connectedness significantly increases CEO turnover probability especially for poorly performing CEOs. As noted by Brickley (2003), there is no consensus as regards the effect of corporate governance on CEO turnover which has opened room for more research on the variation and determinants of CEO turnover. Hence, Khurana (2000) suggests that rather than relying on the executive labour market, which could be risky and requires a great deal of discretion, firms would rather rely on the executives personal networks to assess, suitable nominees. Likewise Liu (2014) asserts that the market for executives is characterised by imperfections so that the director's network becomes a crucial element. In order to determine the benefits of connectedness to a firm, Geletkanycz and Boyd (2011) examined in a contingency framework comprised of both agency and embeddedness theories. They suggest that CEO outside directorship is beneficial for firms facing competitive constraints on growth and also for strategically focused firms than for highly diversified firms.

Advocates of board room connections argue that when there is director inter-lock, there would be better firm performance because it reduces the cost of information acquisition. Recent research like Renneboog and Zhao (2014) study the effect of director networks on takeovers. Their results show that better connected firms are more active bidders and that when bidders and targets have common directors the takeover process is quicker (reduction in negotiation time) and more successful. They also argue that the presence of connections provides informational advantage

which presents room for more trust between parties involved. In the case of M&A, the directors of the target firms stand a chance of being appointed in the new board. Similarly, Rousseau and Stroup (2015) reveal that bidders tend to approach firms for acquisition where a current director has been a board member.

Engelberg et al (2013) study the compensation arrangement of 2700 CEOs of large US listed firms from 2000-2007 and how this is affected by the CEOs connection. They find that on average, additional connection results in about $17,000 increase in total compensation. This relationship is however concave. In addition, the study reveals that firms most likely to benefit from the CEOs external connection (especially poorly performing firms) pay the highest price for CEO network or connection. In a similar study, Renneboog and Zhao (2011) study the relationship between CEO compensation and executive networks for UK companies. The study reveals that both direct and indirect networks result in higher compensation. Renneboog and Zhao assert that while networks could have some advantages like information provision, strong networks lead to busy directors on the board which undermines the monitoring effectiveness of directors to the extent that it results in less CEO pay for performance sensitivity and higher compensation. They conclude that while connectedness/networks are beneficial, firms should have the right type of networks to balance the advantages and disadvantages of director networks. Also, Kramarz and Thesmar (2013) reveal that firms with highly connected executives pay higher CEO compensation and are less likely to dismiss underperforming CEO, such firms also engage in less increasing acquisitions. Thus, suggesting that board networks tend to undermine the effectiveness of corporate governance in the firm. Taking a novel approach, Hwang and Kim (2009) differentiate between the conventional definition of independence and social independence. They suggest that board members who have social ties with the CEO are not totally independent. The study reveals that for boards where there is a social tie between the

CEO and directors; there is no significant difference in the CEO total compensation. But for companies where the board is conventionally and socially independent, CEOs total compensation decreases on average by $3.3million. A similar result was observed for CEO annual salary and bonus. Hwang and Kim (2009) conclude that this decreased pay is often associated with poor firm performance. In the banking industry, Battistin et al (2012) finds that boardroom connections negatively affect bank performance. The finding is premised on the assumption that connections increase managers' tenure, which often leads to entrenchment and consequent poor firm performance. In addition they find that connections reduce the turnover probability for bank managers.

Nguyen (2012) examines the impact of social ties on the effectiveness of directors. They find that the likelihood of CEO dismissal due to poor performance is lower for CEOs who have social ties with a number of directors. They find that socially connected CEOs are more likely to find new and sometimes better employment after a forced removal. In a related study using educational background as a measure of connectedness, Cohen et al (2008) finds that mutual fund managers tend to invest in firms managed by people with whom they have educational networks.

In light of the forgoing, we can observe that there is no conclusion as to the effect of executive network on various aspects of the firm. By employing a different approach in measuring CEO network[18], we hope to provide evidence on how CEO network affects background risk. We therefore propose that because director network provides a source of information to the firm and also, a measure of CEO experience, there should be a negative relationship between CEO network and employment risk. Stating formally;

[18] CEO network is measured as the number of corporate boards a sitting CEO has served on.

Hypothesis 3: The likelihood of CEO employment risk reduces with increasing CEO network.

5.3 Data

5.3.1 Sample and data source

The data sample consists of firms making up the FTSE 350 index from 1997-2010 with the exclusion of financial firms. Financial firms are excluded due to the different accounting treatment of revenue and profits for financial firms such as banks, investment trust and insurance companies which is different from other types of companies. Also such firms have special regulatory requirements like the capital structure with a minimum requirement for operation, therefore it would be inappropriate to compare decisions made in financial firms such as investment and financing decisions with those of non-financial firms (see Adams and Mehran, 2005; Spong and Sullivan, 2007; Belghitar and Clark, 2012). Another factor used in the data selection criteria is that firms must have at least two consecutive years of information in order to determine the CEO employment risk. The FTSE 350 index has been chosen because companies listed in this index are comprised of the largest companies on the LSE based on market capitalization. This study is focused on the CEO of the firm because they have more flexibility than other executives so that their actions or inactions may result in greater consequences for the company. The core duties of the CEO include; decision making, setting the strategy of the company and shaping the organisational structure; so they (the CEO) are mostly held accountable for the failure of the firm (Bertrand and Mullainathan, 2003).

The information relating to board size, board independence and CEO network has been extracted from BoardEx. BoarEx is an independent company providing comprehensive information on executive remuneration for companies around the world. Firm specific financial information was extracted from Datastream. Datastream provides current and historical time series data, in ready

to use form, dating as far back as 1973. Data gathered from these two databases were matched which forms our sample data. Table 5.1 below shows the distribution of the companies by sector, while Figure 5.1 is a histogram representing the distribution of firms according to sector. From the figure, we find that industrial and consumer services sectors have the highest observations. Hence they were deleted from the sample in our robustness test to find if there would be any change in the results, but the results obtained remained qualitatively the same. After deleting financial firms, and firms without corresponding BoardEx and Datastream information, the total number of firms in the sample amounted to157 with an unbalanced panel of 1875 firm year observations. Table 5.2 below shows the variables extracted from the two data sources and their definitions.

Table 5.1: Distribution of Firms by Sector.

INDUSTRY	NUMBER OF FIRMS	PERCENTAGE OF ENTIRE SAMPLE
Oil & Gas	9	6
Basic Materials	11	7
Industrials	47	30
Consumer Goods	20	13
Health Care	9	6
Consumer Services	41	26
Telecommunications	4	2
Utilities	4	2
Financials	0	0
Technology	12	8
Total	157	100

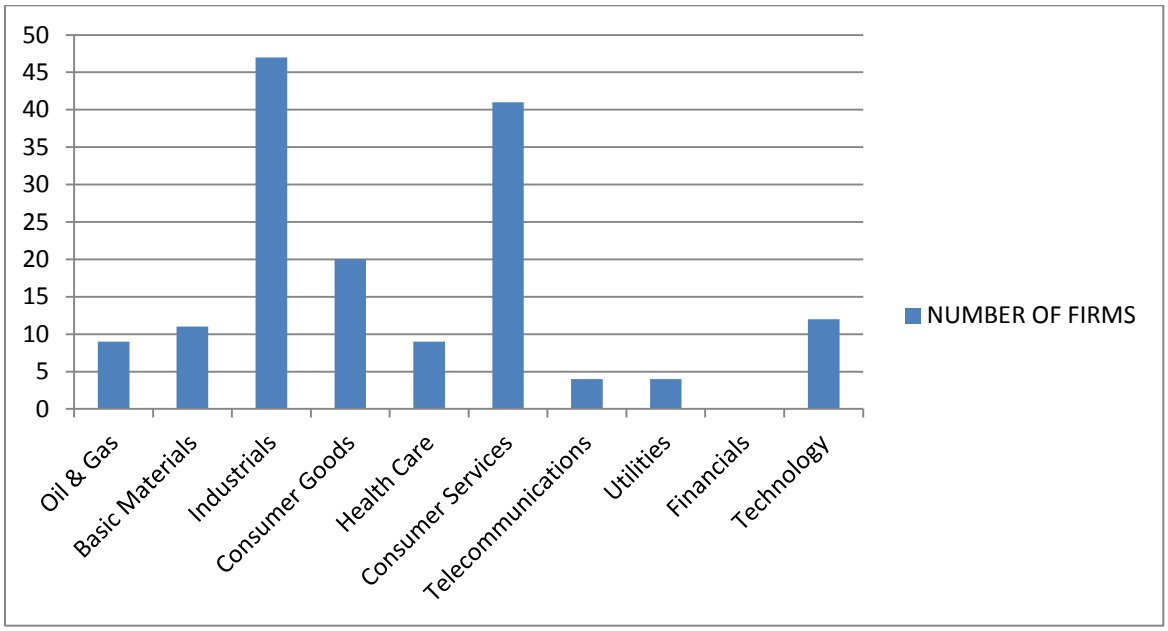

Figure 1: Distribution of Firms by Sector.

Table 5.2: Variable Names, Definition and Source.

Variables		Definition	Source
Employment Risk		This is calculated as a dummy variable indicating 1 for two years consecutive decline in stock price coinciding with two year decline in ROA and 0 otherwise	Authors' calculation
Employment Risk Measure	**Return on Asset (ROA)**	This is the ratio of net income to total asset	Datastream
	Stock Price	The change in value of the stock price as at fiscal year end	Datastream
Board Size		This is the number of directors on the company's board	Boardex
Board Independence (BID)		This is measured as the ratio of executive directors to non-executive directors	Boardex
CEO Network Size (CEO NTW)		This is the number of boards the CEO has served to date	Boardex
Board Network		This is the average number of boards all the directors have served in to date	Boardex
CEO Tenure		The length of time that the CEO has been in the current role measured in years,	Boardex
CEO Age		The age of the CEO in years	Boardex

CEO Total Wealth	This is the sum of equity held, estimated value of options and LTIPs held	Boardex
Firm Size	Measured as market capitalization	Datastream
Leverage	The ratio of long term debt to capital	Datastream
Firm Risk	This is the volatility of the stock price	Datastream

5.3.2 Descriptive Statistics and Correlation Analysis

Table 5.3 below shows the descriptive statistics for the variables used in the estimation process. From the table, we find that on average, the board size of the firms in the sample is 9, with the smallest board comprised of 4 directors and the largest with 25 board members. It is also observed that on average the proportion of independent directors to total directors is 0.49, approximately 50%. This shows that majority of the firms making up the FTSE350 comply with the corporate governance code which recommends that at least 50% of the board is comprised of independent directors. CEOs in the sample have served on at least one other board with a maximum of 10 boards for some CEO. For CEO tenure and age, we find that the longest serving CEO has spent 34 years in the role with an average of 5 years. The average age of CEOs in the sample is 52 years with the oldest being 77 years and the youngest 34 years. For the sampled period, firms on average have a ROA standing at 8.8, with a minimum negative of -54.8 and a maximum of 75.

The correlation matrix presented in Table 5.4 shows the relationship amongst the variables used in the estimation. We find a positive correlation between board size, board network and firm size. This implies that as board size increases, the group network increases, and board size also increases with the size of the firm. However we find a negative correlation between board independence and board size. As expected, we find positive correlation between CEO tenure and age and a negative correlation between CEO age and firm risk.

Table 5.3: Descriptive Statistics.

Variable	Observations	Mean	Std. Dev.	Min	Max
Board Size	1874	9.315	2.698	4	25
BID	1874	0.485	0.149	0	0.929
CEO NTW	1871	2.378	1.763	1	10
Board Network	1874	264.385	365.102	0	3456
ROA	1855	8.802	9.030	-54.820	75.090
Firm Size	1856	14.032	1.612	9.582	19.163
CEO Tenure	1873	5.481	5.525	0	34.400
CEO Age	1867	51.799	6.300	34	77
Firm Risk	1648	27.099	8.462	10.740	71.220
Leverage	1752	25.052	18.483	0.000	171.440
CEO Total wealth	1823	8.179	1.573	2.565	14.069

Note: For variable definitions see Table 5.2

Table 5.4: Correlation Matrix.

		1	2	3	4	5	6	7	8	9	10	11
1	**Board Size**	1										
2	**BID**	-0.044	1									
3	**CEO NTW**	0.349	0.154	1								
4	**Board Network**	0.6262	0.211	0.476	1							
5	**ROA**	-0.035	-0.055	-0.070	-0.083	1						
6	**Firm Size**	0.588	0.291	0.443	0.520	0.099	1					
7	**CEO Tenure**	0.004	-0.186	0.014	-0.042	0.061	-0.115	1				
8	**CEO Age**	0.140	0.008	0.223	0.073	-0.057	0.104	0.307	1			
9	**Firm Risk**	-0.201	0.019	-0.063	-0.121	-0.184	-0.300	0.052	-0.089	1		
10	**Leverage**	0.009	-0.053	0.016	-0.002	0.126	-0.006	-0.012	-0.050	-0.004	1	
11	**CEO Total wealth**	0.063	0.080	0.034	0.092	0.123	0.181	0.206	-0.048	0.089	-0.005	1

Note: For variable definitions see Table 5.2

5.4 Model Specification

5.4.1 Estimation Technique

The data for this study is a combination of time series and cross-sectional data which makes it a panel data. The dependent variable for the analysis is a dummy variable which takes the value of 1 when employment risk is high and 0 otherwise. Therefore we can say that the dependent variable is a binary response variable. To proceed with the analysis, we estimate a probit model[19], which assumes normal distribution of the errors. We estimate the following probit model;

$$\Pr\left(Background\ Risk\right)_{it} = \beta_0 + \beta_1 BSize_{it-1} + \beta_2 BID_{it-1} + \beta_3 CEONetwork_{it-1} + \sum_{k=7}^{n} \beta_4\ Control\ Variables_{itk} + \varepsilon_{it}$$

Where, n= number of control variables, k=1, 2, 3 … 7

Where; CEO employment risk is used as a proxy for background risk. Following Martin et al (2013) we measure employment risk as a dummy variable taking the value of 1 if there is consecutive two year decline in ROA corresponding with two year decline in stock price or 0 otherwise. BSize is Board Size; BID is Board Independence; CEO Network is the CEO network size. These variables are lagged one year.

5.4.2 Estimation Results

Table 5.5 presents the results of the estimation with the Probit model. We begin by including one dependent variable at a time with the last model for each panel including all three dependent variables for the hypotheses and the control variables. We observe that there is very little collinearity in the results as the independent variables; board size, board independence and CEO network show minimal change in magnitude and retain their significance when included together in Models 3. In line with previous studies, Bushman et al (2010), for the Probit model, we report

[19] An alternative approach is the use of logit which uses the standard logistic distribution.

and interpret the marginal effects at the mean values (i.e. the partial derivative of the probit function with respect to the variable in question, this is analysed at the mean values of all other explanatory variables) because probit model assumes nonlinearity, hence interpreting the estimated coefficient directly could be difficult. We test our first hypothesis that as board sizes increases the probability of employment risk increases. We find that the marginal effect of board size on employment risk is positive and statistically significant at 1% across all models. It is observed that the magnitude of the marginal effect increases as we add the other independent variables in Model 2&3. The results provide support for hypothesis 1, suggesting that the likelihood of employment risk increases for a given increase in board size. The results are in tandem with previous research like Yermack (1996) and Liang et al (2013) which find negative relationship between board size and firm performance. They argue that large boards are plagued with communication and coordination problem and such firms have increased agency cost leading to poor performance. Hence, from our earlier argument, poor firm performance increases the likelihood of employment risk and subsequent job termination.

Regarding the second hypothesis, we propose that in line with recent corporate governance codes requiring boards to be independent, board independence will increase the likelihood of employment risk. This is because when boards are independent they are able to make objective decisions as regards poorly performing CEOs. But when the board is not sufficiently independent, a decision to fire the CEO is unlikely when he is not performing as expected because the directors share common compensation incentives with the executive directors. From Table 5.5 Models 2&3 we find that there is a positive significant marginal effect of board independence on CEO employment risk.

Table 5.5: Estimation Results with Probit Model.

Dependent Variable: Employment Risk	**Probit Model**		
Independent Variables	(1)	(2)	(3)
Board Size	0.193***	0.236***	0.238***
	(4.170)	(4.850)	(4.850)
BID		0.245***	0.248***
		(3.100)	(3.120)
CEO NTW			-0.006
			(-0.330)
ROA	-0.071***	-0.067***	-0.068***
	(-5.68)	(-5.490)	(-5.490)
Firm Size	0.016	0.027**	0.026**
	(1.63)	(2.510)	(2.320)
CEO Tenure	-0.026***	-0.022**	-0.021**
	(-2.59)	(-2.120)	(-2.100)
CEO Age	0.122	0.112	0.116
	(1.370)	(1.260)	(1.290)
Firm Risk	0.083**	0.081**	0.083**
	(2.080)	(2.040)	(2.060)
Leverage	0.001**	0.001**	0.001**
	(2.150)	(2.360)	(2.380)
CEO Wealth	-0.015*	-0.015*	-0.015*
	(-1.700)	(-1.690)	(-1.710)
Observations	1197	1197	1197
Pseudo R^2	0.092	0.101	0.101

Note: This table reports the results for the Probit model. The dependent variable is background risk and employment risk has been used as proxy. This is measured as a dummy variable taking the value of 1 when there is employment risk and 0 otherwise. All other variables are defined in Table 5.2 The Z-scores are presented in parenthesis. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Particularly, from Model 3, we find that for a given level of increase in board independence, the z-score of CEO employment risk with performance measures as proxies increases by 0.248. The results imply that CEO employment risk is less likely for independent boards when performance good. The evidence provides support for Hypothesis 2, which is in tandem with previous studies. For example Laux (2008) shows that there is a positive relationship between board independence

and voluntary CEO turnover. Also, Weisbach (1988) shows that there is a strong relationship between prior firm performance and voluntary CEO turnover. He argues that independent boards are more likely to dismiss poorly performing CEO. Taken together, the result of the hypothesis also supports the recent recommendations for more independent boards by various corporate governance codes and stakeholder.

With respect to the third hypothesis, we propose that the CEO network may negatively affect his/her employment risk. We propose this because when CEOs have served in several boards they gather experience and can be a source of information provision to the firm. From Table 5.5, although the sign is negative as expected, the results are not significant. Hence we fail to provide evidence for hypothesis 3 in the Probit model.

5.4.3 Endogeneity Concerns

Endogeneity appearing in different forms has been a source of major concerns in corporate governance and finance research. Endogeneity can be present in a model in the form of reverse causality, an omitted variable, measurement error or unobserved firm heterogeneity (Pathan and Faff, 2013). For example, Gillian et al (2003) show that there is reverse causality between firm performance measured as Tobin's q and corporate governance mechanisms, Himmelberg et al (1999) explains the significance of unobserved firm characteristics and its effect on the relationship between ownership and performance. Hermalin and Weisbach (1998) address endogeneity concerns for board composition. As noted by Roberts and Whited (2012) if endogeneity issues are not addressed they are likely to result in biased and inconsistent estimates, and therefore, it would be wrong to rely on such results. To resolve this issue in our model, we employ the instrumental variable probit estimation technique (IVPROBIT). The use of instrumental variable in probit model, requires that appropriate instrument(s) be added to the model. In the case of our model, we suspect that board size can affect employment risk through

performance, such that large boards result in poor firm performance which makes CEO employment risk more likely. On the other end, employment risk may affect board size through performance so that when performance is poor, board size is likely to change depending on the needs of the firm. Roberts and Whited (2012) suggest that an example of a valid instrument is one that it is correlated with the independent variable. In order to combat this form of endogeneity, we identify a variable which can serve as an instrument for board size but is not related to CEO employment risk. In this case we use the average board group network[20]. We assume that there is a relation between the size of the board and the size of the board network. So that as board size increases, board group network increases. We find a positive correlation between board size and board group network in Table 5.4.

5.4.4 Estimation Results for IVPROBIT

Table 5.6 presents the results using the instrumental variable probit model. We find that the marginal effects of the variables presented here are larger than the results presented using probit without addressing endogeneity. This shows that there is indeed a causal relationship between board size and CEO employment risk. We examine our first hypothesis that the likelihood of employment risk is increasing in board size. We find that for all three models board size shows a statistically positive significant result at 1%. This implies that for a given change in board size, the likelihood of CEO employment risk increases by about 0.950. The results provide support for hypothesis 1. When boards are large, there is usually communication and coordination problem which results in poor firm performance. As observed in the correlation analysis we find negative correlation between board size and performance (measured by ROA). The results complement previous research (Eisenberg et al, 1998; Yermack, 1996; Liang et al 2013) which reveals significant negative relationship between board size and profitability. Pathan and Faff (2013)

[20] Board group network is measured as the sum of the networks of individual board members divided by the total number of board members.

also establish similar findings for large US banks. As stated earlier poor performance increases the likelihood of employment termination (Kaplan and Mitton, 2012).

Moving on to the second hypothesis; we propose that board independence measured as the proportion of outside directors on the board is likely to result in increased employment risk for the CEO. To the extent that when a board is sufficiently independent, independent directors become effective in monitoring the activities of the executives and are able to discipline poorly performing CEOs. Reputational concern will also motivate independent directors to properly monitor the activities of CEO.

From Table 5.6, we find that there is statistically positive relationship between board independence and CEO employment risk, suggesting that the likelihood of employment risk increases by 0.549 for a given increase in the level of board independence. Thus providing support for hypothesis 2. This is consistent with the findings of Laux (2008) that board independence is positively related to voluntary CEO turnover which may be due to poor firm performance. In addition, Weisbach (1988) reveals that the probability of voluntary resignation of CEOs is higher for more independent boards; (see also Huson et al, 2004). Taken together, the results for board independence are also in support of the recommendations of corporate governance codes for more independent boards. Taken together, the results for board independence are also in support of the recommendations of corporate governance codes Hampel (1998) and Higgs (2003) for more independent boards.

The last hypothesis proposes that there will be a negative relationship between CEO network and CEO employment risk. That is for CEOs with large network size, the probability of employment risk is lower. This is based on the premise that having served on different boards, CEOs gather

experience, are equipped with more information and are therefore able to deliver better performance results so that it is highly unlikely that he/she would be fired.

Table 5.6: Estimation Results with IVProbit.

Dependent Variable: Employment Risk		**IVPROBIT**	
Independent Variable	(1)	(2)	(3)
Board Size	0.919***	0.835***	0.950***
	(0.200)	(0.210)	(0.241)
BID		0.500***	0.549***
		(0.110)	(0.117)
CEO NTW			-0.041*
			(0.022)
ROA	-0.037*	-0.043**	-0.038*
	(0.020)	(0.018)	(0.021)
Firm Size	0.087***	0.091***	0.098***
	(0.022)	(0.025)	(0.025)
CEO Tenure	-0.021**	-0.010	-0.009
	(0.011)	(0.011)	(0.011)
CEO Age	0.697	0.749	0.709
	(1.491)	(1.530)	(1.502)
Firm Risk	0.074*	0.063	0.071*
	(0.038)	(0.039)	(0.039)
Leverage	0.001*	0.001**	0.002**
	(0.001)	(0.001)	(0.001)
CEO Wealth	-0.015*	-0.020**	-0.019**
	(0.009)	(0.008)	(0.008)
Observations	1193	1193	1193
Wald test of exogeneity	0.0060***	0.0205**	0.0236**

Note: the table represents the IVProbit regression of the model. The dependent variable is background risk, we have used employment risk as proxy for background risk, this is a dummy variable representing 1 if background risk is high and 0 otherwise. All other variables are defined in Table 5.2. The average board network has been used as instrument. The Wald test of exogeneity suggests that the model is endogenous and the instrument is valid. The coefficient represents the marginal effects. Robust Standard errors in parenthesis. *, **, *** represents significant levels of 10%, 5% and 1% respectively.

The results presented in Table 5.6 support this hypothesis. This is particularly interesting because the results for the probit estimation were not significant whereas after controlling for endogeneity using IV probit in Table 5.6 the results are now significant. As observed there is statistical negative marginal effect. This means that for a given increase in network size, employment risk drops by 0.03. The results are in agreement with those of Renneboog and Zhao (2014) which reveal that the board connections provide information advantage for active bidders and result in successful acquisitions. Also, Engelberg et al (2013) finds that poorly performing firms pay more to CEOs with more connections. In the same light, Kramarz and Thesmar (2013) establish that highly connected firms are less likely to dismiss poorly performing CEOs. The results also lend support for the resource dependency theory, (Pfeffer and Salancik, 1978).

To examine further the relationship between the likelihood of CEO employment risk and corporate governance mechanisms, we have included in addition to the independent variables in the model, a comprehensive set of control variables to minimise the effect of omitted variables. These control variables are also intended to capture both CEO and firm characteristics. Following previous studies (Fiordelisi and Ricci, 2014; Bushman et al, 2010) we control for performance (ROA), firm size, CEO tenure, CEO age, firm risk, leverage and CEO total wealth. The definition of these variables are presented in Table 5.2. From Table 5.6 we observe that the effect of ROA and CEO total wealth is negative as expected. As firm performance increases, the likelihood of employment risk reduces. Likewise, it is highly unlikely that CEOs with large firm based wealth be dismissed. Firm size as expected is positive and statistically significant at 1%. Larger firms have more analysts following them and more media coverage so that employment risk increases for CEOs of large firms. Firm risk measured as the volatility of stock price is positive indicating that employment risk is more likely as firm risk increases. We also find that

CEO employment risk increases in leverage, so that firms with more debts are more likely to dismiss poorly performing CEOs. Lastly we find that CEO age even though positive as expected does not determine employment risk while CEO tenure lowers the likelihood of employment risk. Table 5.6 also presents the results for Wald test of exogeneity; the results are significant showing that the instrument employed is valid.

5.5 Robustness Tests

To check the validity of our measure of employment risk we use an alternative method. Following Fiordelisi and Ricci, (2014) we measure employment risk as a dummy variable taking the value of 1 if a company has changed its CEO with respect to the previous year and 0 otherwise. The results for this new measurement is presented in Table 5.7 we find that the results are qualitatively the same indicating that the results earlier obtained in Table 5.6 are not influenced by the way employment risk is measured.

A further robustness test is carried out by eliminating firms in the Industrials and Consumer services sector. From table 5.1, we find that the industrial and consumer services sector make up more than 50 percent of the sample. We therefore eliminate these firms to find out if our results are driven by firms in the two sectors. The results obtained are presents in table 5.8. We find that the results remain qualitatively the same. This suggests that the determinants of background risk are not specific to a particular sector.

Table 5.7: Estimation Results with Alternative Measure of Employment Risk. (Employment risk equal to 1 if the company has changed and 0 otherwise).

Dependent Variable: Employment Risk			
Independent Variables	(1)	(2)	(3)
Board Size	0.523*	0.491*	0.596*
	(0.298)	(0.267)	(0.307)
BID		0.117*	0.265*
		(0.070)	(0.136)
CEO NTW			-0.036*
			(0.021)
ROA	-0.026*	-0.027*	-0.027*
	(0.016)	(0.015)	(0.015)
Firm Size	0.062**	0.065**	0.070**
	(0.031)	(0.032)	(0.032)
CEO Tenure	-0.153***	-0.146***	-0.150***
	(0.013)	(0.014)	(0.008)
CEO Age	0.984	-0.063	-0.058
	(1.103)	(0.073)	(0.072)
Firm Risk	-0.034	-0.033	-0.028
	(0.028)	(0.027)	(0.029)
Leverage	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
CEO Wealth	0.012**	0.010*	0.012**
	(0.006)	(0.005)	(0.006)
Year effect	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes
Observations	1287	1287	1287
Wald Test	338.00	314.48	382.57
Wald test of exogeneity	0.0227	0.0175	0.0112

Note: the table represents robustness check using IVProbit regression of the model. The dependent variable is background risk, we have used employment risk as proxy for background risk, this is a dummy variable taking the value of 1 if a company has changed its CEO with respect to the previous year and 0 otherwise. All other variables are defined in Table 5.2. The average board network has been used as instrument. The Wald test of exogeneity suggests that the model is endogenous and the instrument is valid. The coefficient represents the marginal effects. Robust Standard errors in parenthesis. *, **, *** represents significant levels of 10%, 5% and 1% respectively.

Lastly, as a robustness check, we compute the average board network without the CEO network as an instrumental variable. This is to investigate if the inclusion of the CEO network in the board average network would alter the results. The results obtained remain the same; hence we can confirm that the exclusion of the CEO network from the group network does not undermine the results obtained earlier in table 5.6. The results are presented in table 5.9.

Table 5.8: Estimation Results without Industrial and Consumer Services Sectors.

		IVPROBIT	
Dependent Variable: Employment Risk			
Independent Variables			
	(1)	(2)	(3)
Board Size	0.855***	0.778***	0.903**
	(0.277)	(0.277)	(0.379)
BID		0.379**	0.439**
		(0.169)	(0.210)
CEO NTW			-0.036
			(0.052)
ROA	-0.050*	-0.057**	-0.053*
	(0.028)	(0.025)	(0.029)
Firm Size	0.077**	0.075**	0.081**
	(0.032)	(0.034)	(0.037)
CEO Tenure	-0.013	-0.004	-0.001
	(0.016)	(0.017)	(0.019)
CEO Age	0.492	1.084	0.988
	(2.416)	(2.480)	(2.452)
Firm Risk	0.065	0.062	0.072
	(0.051)	(0.051)	(0.052)
Leverage	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
CEO Wealth	-0.013	-0.017	-0.015
	(0.014)	(0.013)	(0.014)
Observations	567	567	567
Wald test of exogeneity	0.0629***	0.0754*	0.0967*

Note: the table represents the IVProbit regression of the model. The dependent variable is background risk, we have used employment risk as proxy for background risk, this is a dummy variable representing 1 if background risk is high and 0 otherwise. All other variables are defined in Table 5.2. The average board network has been used as instrument. The Wald test of exogeneity suggests that the model is endogenous and the instrument is valid. The coefficient represents the marginal effects. Robust Standard errors in parenthesis. *, **, *** represents significant levels of 10%, 5% and 1% respectively

Table 5.9: Robustness test: Estimation Results with alternative measure of instrumental variable where the CEO network is excluded from the average board network.

Dependent Variable: Employment Risk		**IVPROBIT**	
Independent Variable	(1)	(2)	(3)
Board Size	0.981***	0.881***	1.019***
	(0.201)	(0.219)	(0.246)
BID		0.517***	0.574***
		(0.111)	(0.115)
CEO NTW			-0.047**
			(0.023)
ROA	-0.031	-0.040**	-0.033
	(0.021)	(0.019)	(0.023)
Firm Size	0.093***	0.096***	0.105***
	(0.022)	(0.026)	(0.026)
CEO Tenure	-0.022**	-0.010	-0.009
	(0.010)	(0.011)	(0.011)
CEO Age	0.895	0.894	0.878
	(1.495)	(1.545)	(1.506)
Firm Risk	0.073*	0.062	0.071*
	(0.038)	(0.039)	(0.038)
Leverage	0.001*	0.001**	0.001**
	(0.001)	(0.001)	(0.001)
CEO Wealth	-0.014	-0.019**	-0.018**
	(0.009)	(0.008)	(0.009)
observations	1193	1193	1193
Wald test of exogeneity	0.0056***	0.0197**	0.0227**

Note: the table represents the IVProbit regression of the model. The dependent variable is background risk, we have used employment risk as proxy for background risk, this is a dummy variable representing 1 if background risk is high and 0 otherwise. All other variables are defined in Table 5.2. The average board network has been used as instrument. The Wald test of exogeneity suggests that the model is endogenous and the instrument is valid. The coefficient represents the marginal effects. Robust Standard errors in parenthesis. *, **, *** represents significant levels of 10%, 5% and 1% respectively

5.6 Conclusion

In this chapter, we show that corporate governance mechanisms are strong determinants of background risk particularly CEO employment risk. We begin the investigation process by employing the probit estimation technique and show why this technique is favoured over linear probability model. Concerns for the potential presence of endogeneity necessitated further

analysis using the IVProbit model. The results obtained show better consistency and validity than the results obtained from ordinary Probit model. To reassure the validity of results, the estimation process was done with a different method of employment risk measurement. The results obtained remained qualitatively the same.

The empirical analysis in this chapter provides grounds for which the hypotheses made are justified. The findings show that corporate governance mechanisms are major determinants of CEO background risk. Specifically, we find that the likelihood of CEO employment risk increases with increased board size. This supports the view that large boards often have communication and coordination problems which leads to poor firm performance and subsequent dismissal of CEO as a result of the poor firm performance. The negative sign in the correlation analysis between board size and performance measured as ROA further buttress this fact. The next corporate governance mechanism; board independence, confirms our expectation that independent boards are actually effective and that they discipline poorly performing CEOs. The results also show support for current recommendations for independent boards. Specifically, board independence increases the likelihood of CEO employment risk. The last hypothesis examines the role CEO connection play in determining the level of employment risk. We find that as expected, better connected CEOs are less likely to be dismissed from their job. As the literature suggest, well connected CEOs do have and provide needed information combined with experience so that firm performance is increased and employment risk is less likely. Taken together, the chapter provides evidence that corporate governance mechanisms determine the CEOs employment risk.

An important conclusion of this study is that, unlike previous studies which focus on the relationship between corporate governance mechanisms and firm performance, we show that

governance mechanisms are effective in checking the behaviour of CEOs. We therefore recommend that policy makers alongside board of directors should consider the determinants of CEO background risk in decision making and strengthen them in practice so that CEOs and other executives would focus on advancing the interest of shareholders and other stakeholders.

This study, like every other research work is not without its limitations. Due to data availability, we have examined only three factors that determine CEO background risk. Future studies may consider other factors aside from corporate governance that may determine CEO background risk. This study is also based on FTSE350 non-financial firms. As a starting point of future research, financial firms can be studied and compared with non-financial firms focusing on a more recent time period. Also, since corporate governance codes apply to mostly listed firms, private firms can be investigated to ascertain if there is any similarity in the determinants of background risk in both public and private firms. It is important to note that given the above mentioned limitations, the results obtained in this study remain valid.

Chapter 6: Summary and Conclusion

6.1 Introduction

This research was motivated by the recent financial crisis and the rising concerns on issues relating to executive compensation especially that of the CEO. The way in which executive compensation can affect the CEOs behaviour and firm's outcome has been a hot debate in recent studies. Existing literature has focused mainly on the effect of executive pay on firm performance or the effect of performance on executive pay. There is, however, less emphasis on factors that could influence the relationship between compensation and firm outcomes. There is no doubt that the amount of executive compensation can affect the risk attitude of CEOs which can be seen from the investment decisions of the firm. The compensation of the executive is structured in such a way that it is affected by the change in the stock price and the volatility of the stock price. It, therefore, means that the compensation package has an inherent risk associated with it. This inherent risk could affect the risk-taking behaviour of the CEO depending on the CEOs' reference point and degree of risk aversion. Like every other investor, the CEO is usually confronted with more than one risk at a time. The argument therefore, is to ascertain the effect these other risks (known as background risk) on the relationship between compensation and CEO risk attitude, firm performance or other firm outcomes. It is important to note that this study is one of the first to examine the effect of background risk on firm outcomes

This concluding chapter highlights the main findings of the study, the main contributions, the limitations of the study and suggestions for future research.

6.2 Research Findings

In an attempt to address the objectives of the study, CEOs of the FTSE350 constituency formed the sample size covering the years from 1997-2010. This research was an attempt to examine the

effect of background risk on the relationship between executive compensation and risk taking/firm performance, and also to examine the determinants of background risk. In order to achieve the objectives, the thesis has been divided into three parts. The first part is chapter two which is a theoretical presentation of corporate governance and its link to executive compensation in the UK. It also provides some theories on executive compensation including its components and determinants. The second part is made up of three empirical chapter with the first two (chapters 3&4) focusing on risk taking and firm performance in relation to background risk respectively. These are immediately followed by another empirical chapter (chapter 5) which examines the determinants of background risk. Below is a brief presentation of the research findings according to the results from the three empirical chapters.

Background Risk: Executive Compensation and Risk Taking

The aim of the first empirical chapter was to find out if there is a relationship between background risk and risk taking on one hand and if there is an impact of background risk on the relationship between executive compensation and risk taking. Consequently, two types of background risk are identified; CEO employment risk and CEO tenure. Given that the CEO compensation package is made up of various components, CEO compensation was divided into two parts; CEO delta (option based wealth) and CEO cash compensation. To capture CEO risk taking behaviour, a composite measure comprised of three highly risky investment choices employed in previous studies(Coles et al, 2006, Denvers et al, 2008, Martin et al, 2013) were utilised.

The estimated coefficient of background risk shows a negative value which is statistically significant. The results indicate that the presence of background risk reduces risk taking. That is when CEOs are faced with potential employment risk; they become more risk averse which is

observed in the reduction of highly risky investments. This result is also true for CEO tenure, the second background risk measure. To examine the impact of background risk on the relationship between compensation and risk taking, an interaction variable with CEO background risk and CEO delta was generated. Results show that in the presence of employment risk there is statistically significant negative relationship between CEO delta and risk taking. This indicates that employment risk will increase CEO risk aversion and lower risk taking. The results support the background risk theory that, the introduction of an additional risk will result in risk aversion. From the results for CEO Tenure, we find that contrary to expectation, the estimated coefficient is positive. The hypothesis was therefore not accepted. What could account for this is that CEOs with longer tenure may have more experience with risk taking so that even though they are closer to retirement, they are confident about the outcomes of risky investment choices.

To examine the effect of cash compensation on risk taking in the presence of background risk, an interaction variable was generated between cash compensation and both measures of background risk. We find that cash compensation increases risk taking in the presence of background risk. The results support the hypothesis for employment risk as cash compensation provides a different incentive for risk taking. As a measure of CEO wealth diversification, cash compensation does not deter risk taking in the presence of background risk such as employment risk. Results for CEO tenure, however, provide limited support for the hypothesis. The study also controlled for CEO and firm characteristics. The results provide evidence that CEO wealth is positively related to risk taking; as CEO wealth increases, risk taking increases. We, however, fail to find support for CEO age. As regards the firm characteristics examined, firm size, ROE, firm cash, leverage all play a role in determining risk taking.

Lastly as a robustness check, the baseline model is re-estimated in two ways. First we consider the recent financial crisis which occurred between 2007 and 2009. The equation was re-estimated without those years and the results obtained remained qualitatively the same. Secondly, the risk taking variable was decomposed into its component parts as an alternative way of measuring risk taking. The results with the component parts also remained qualitatively same. Taken together, the results of the empirical chapter provide support for the background risk theory.

Background Risk: Executive Compensation and Firm Performance

The second empirical chapter (chapter 4) sets out to address the impact of background risk on one hand and the impact of background risk on the relationship between compensation and firm performance on the other hand. Existing studies already provide evidence of a relationship between compensation and firm performance, although with divergent results. To measure firm performance, both accounting and market measures of performance; ROA (Return on Asset) and RI (Stock Return) are utilised respectively. Like in the previous chapter, CEO compensation is decomposed into two components; CEO delta and CEO cash compensation, because of the perceived difference in incentives provided by the two components. The proxy for background risk remains CEO employment risk and CEO tenure. The analysis started with fixed effect regression and progressed to the dynamic GMM estimation because of the persistent nature of the dependent variables and potential endogeneity problems. Given that there are two proxies for our dependent variable; firm performance, we perform our analysis in two parts, first with CEO employment risk and the next part with CEO tenure.

To begin with CEO employment risk, the results show that employment risk leads to poor firm performance. This can be confirmed by the statistically significant negative coefficients. The results indicate that for CEOs facing highly employment risk, firm performance declines. To

examine the impact of background risk on the relationship between compensation and firm performance, an interaction variable for both CEO delta and CEO cash compensation was generated. We find weak support that CEO delta results in poor firm performance in the presence of background risk. The result obtained, though negative as expected was not significant. For cash compensation, we find that background risk results in lower risk taking, this is observed from the estimated negative coefficient which is statistically significant. The results suggest that employment risk will continue to trigger poor firm performance irrespective of the amount of cash compensation. The next part of the analysis examines CEO tenure. We observe that CEO tenure negatively affects firm performance. As CEO tenure increases, they become entrenched because of the amount of firm based wealth that has been acquired over the years. Therefore they become risk averse to the extent that it leads to reduction in risky investment choices which resuts in poor firm performance. It was also observed that this is true for the interaction of CEO tenure and CEO delta. That is, CEO delta results in lower risk taking as tenure increases. However, there is weak evidence for CEO tenure with respect to CEO cash compensation. That is, as CEO tenure increases, cash compensation as a source of outside wealth diversification may boost CEO's confidence so that they engage in more risk taking leading to better firm performance. The analysis also involves controlling for firm and CEO characteristics. The results show that as CEO age increases, performance declines, but firm performance increases with CEO total wealth. Firm size, firm risk, firm cash, were observed to affect firm performance. However, leverage did not play a significant role in firm performance.

To guarantee the validity of results obtained, the baseline equation was re-estimated with an alternative measure of firm performance. We also considered the years of the recent financial crisis. The re-estimated results remain qualitatively the same as earlier results.

Determinants of Background Risk

Having identified the impact of background risk on firm outcomes in the first two empirical chapters, the third empirical chapter examined the determinants of background risk with particular focus on CEO employment risk. The chapter examined how corporate governance mechanisms determine the level of background risk faced by the CEO. Specifically, board size, board independence and CEO networks were considered. The results were estimated using non-financial firms in the FTSE350 constituency from 1997-2010. From the results, we find that the size of corporate boards increases the likelihood of CEO employment risk. The statistically significant positive result lends evidence to the fact that large boards are sometimes plagued with communication or coordination problems. A consequence of this poor firm performance is an increase in the probability of CEO employment termination. The second corporate governance measure; board independence exhibits a positive coefficient which is statistically significant. The result supports the hypothesis that independent boards are effective to the extent that they discipline poorly performing CEOs. The evidence supports the recommendations made by recent governance codes for more independent corporate boards. Lastly, we considered the CEO network size. Although the UK governance codes place some restrictions on cross-directorship, it is observed that for CEOs with more networks employment risk is less likely. The results support the hypothesis suggesting that CEOs with better networks have more experience and information which could benefit the firm. Therefore, they are less likely to be dismissed even in the event of poor performance. Finally, for robustness check, an alternative method was used to measure firm performance; the results remain qualitatively the same, thus, suggesting that earlier results obtained are not biased to the measurement method.

6.3 Research Contribution and Policy Implication

The broad aim of this study is to determine the effect of background risk on CEO risk taking behaviour and firm performance with regards to the incentive provided by the compensation package. Executive compensation is a topical issue amongst academics and practitioners. The rationale for executive compensation has also been questioned in recent studies. Most prior research examines the impact of executive compensation on firm outcomes like investment choices or firm performance. The reason being that, a large part of the compensation package is tied to the firm stock price which poses a form of risk to the CEO's firm based wealth. It is in this line that previous researchers have examined how the risk in the compensation affects risk taking behaviour, firm performance and other firm outcomes. The results of these studies have so far been inconclusive.

In the light of the foregoing, the current study sets out to provide evidence to the fact that other risks specific to the CEO affects the relationship between CEO compensation and risk taking behaviour on one hand and between CEO compensation and firm performance on the other hand. Some of the contributions of the study are as follows;

Firstly, the study goes beyond the agency theory on executive compensation to show that background risk does affect the risk taking behaviour of CEOs. These background risks have been shown in some instances to result in risk aversion which is observed in reduced risk taking.

Secondly, a consequence of lower risk taking is poor firm performance. Apart from contributing to existing literature on executive compensation and firm performance, the study shows that a plausible reason for previous inconclusive results in this area of research is that they may have failed to consider the fact that CEOs are faced with some other risks simultaneously as the risk in

the compensation package. These risks have therefore been shown to affect the incentive provided by the compensation to the extent that it affects firm performance.

Thirdly, since it is not just enough to examine the effect of background risk, this study proceeds further to provide evidence that corporate governance mechanisms determine the likelihood of CEO employment risk.

Fourthly, a related study (Heaton and Lucas, 2000) on background risk has focused on survey data mainly to investigate the background risk of individual investors; this study presents the first empirical evidence of the effect of background risk on the outcomes of corporate organisations.

Lastly, the study makes use of dynamic GMM estimation technique which is rarely used in compensation literature and has never been used in background risk analysis.

In summary, the results provide new insights on how the risk in the executive compensation package may alter firm's outcomes in the presence of background risk. In particular we show that background risk negatively affects risk taking which is also shown to have negative consequence for firm performance. The study also shows that corporate governance mechanisms determine CEO employment risk. We find that more independent boards results in better firm performance, and also more independent boards are more likely to dismiss poorly performing firms.

In addition to the contribution to knowledge, the study may provide useful insights for policy makers and practitioners. With respect to the findings, board of directors alongside the remuneration committee may have to take into consideration the potential background risks that executives especially the CEOs may be confronting because this has been shown to affect firm's outcome. Knowledge of the background risk faced by the CEO of a firm can also help

investment managers/advisers and investors to decide on whether to invest in the stocks of a particular firm.

6.4 Limitation of the Study and Suggestions for Future Research

Like any other research, this study is not without its limitations, some of which can be used as building blocks for future research. Firstly, the study identifies just two types of background risks that a CEO may be experiencing. However in the real world, the CEO might be confronted with more than two types of background risk which can affect the firms' outcome. For example, CEO health status might be a potential background risk.

Secondly, while the empirical approach has its strength we acknowledge that a larger sample size might offer a greater understanding of the theory put forward. This may include unlisted firms or the FTSE all share index. Also, it could be fruitful to conduct a comparative study between financial and non-financial companies.

Thirdly, due to unavailability of data to compute CEO vega (the change in option compensation to a change in stock price volatility) the study focused on only CEO delta, it may be worthwhile to include CEO vega in a new model in future research.

Lastly, there are also concerns of missing data, from both the executive compensation data obtained from BoardEx database and the firm-specific information obtained from Datastream.

Overall, from the researcher's perspective, the above mentioned limitations do not distort the validity of the current study.

REFERENCES

Adams, R. B. & Mehran, H. (2008). Corporate performance, board structure, and their determinants in the banking industry. FRB of New York Staff Report No. 330. Available at SSRN: http://ssrn.com/abstract=1150266 .

Adams, R. B., & Mehran, H. (2012). Bank board structure and performance: Evidence for large bank holding companies. *Journal of Financial Intermediation*, *21*(2), 243-267.

Agrawal, A., & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31(03), 377-397.

Agrawal, A., and Nasser, T. (2012). Blockholders on boards and CEO compensation, turnover and firm valuation. *Working Paper*, 1-59. Available at: http://bama.ua.edu/~aagrawal/IDB-CEO.pdf.

Agrawal, A., & Mandelker, M. (1987). Managerial incentives and corporate investment and financing decisions. *Journal of Finance,* 42, 823-837.

Agrawal, R., & Samwick, A. (1999). The other side of the trade-off: The impact of risk on executive compensation. *Journal of Political Economy*, 107(1), 65-105.

Ahmed, A. S., Zhou, J., & Lobo, G. J. (2006). Job security and income smoothing: An empirical test of the Fudenberg and Tirole (1995) model. Available at SSRN: http://ssrn.com/abstract=248288 or http://dx.doi.org/10.2139/ssrn.248288 .

Alghalith, M. (2012). The impact of background risk. *Physica A*, 391, 6506-6508.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-component models. *Journal of Econometrics*, 68(1), 29–51.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58, 277–297.

Armstrong, C. (2007). The incentives of equity-based compensation and wealth. Available at SSRN: http://ssrn.com/abstract=1147363 or http://dx.doi.org/10.2139/ssrn.1147363

Armstrong, C. S., Larcker, D. F., Ormazabal G., & Taylor, D. J. (2013). The relation between equity incentives and misreporting: The role of risk-taking incentives. *Journal of Financial Economics*, 109(2), 327-350.

Banghøj, J., Gabrielsen, G., Petersen, C., & Plenborg, T. (2010). Determinants of executive compensation in privately held firms. *Accounting & Finance*, *50*(3), 481-510.

Baptista, A. M. (2008). Optimal delegated portfolio management with background risk. *Journal of Banking & Finance*, *32*(6), 977-985.

Barney, J. B. (2011). *Gaining and sustaining competitive advantage* (4th Ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Basuroy, S., Gleason, K. C., & Kannan, Y. H. (2014). CEO compensation, customer satisfaction, and firm value. *Review of Accounting and Finance*, 13(4), 326 – 352.

Battistin, E., Graziano, C., & Parigi, B. M. (2012). Connections and performance in bankers' turnover. *European Economic Review*, 56(3), 470-487.

Bebchuk, L. A., & Fried, J. M. (2004). Executive compensation as an agency problem. *Journal of Economic Perspectives*, 117(2), 71-92.

Bebchuk, L. A., & Fried, J. M. (2004). Pay without performance: the unfulfilled promise of executive compensation. Harvard University Press.

Bebchuk, L. A., Fried, J. M., & Walker, D. I. (2002). *Managerial power and rent extraction in the design of executive compensation* (No. w9068). National Bureau of Economic Research.

Belghitar, Y., & Clark, E. (2012). The effect of CEO risk appetite on firm volatility: An empirical analysis of financial firms. *International Journal of the Economics of Business,* 19(2), 195-211.

Belghitar, Y., & Clark, E. (2014). Convexity, magnification and translation: The effect of managerial option-based compensation on corporate cash holdings. *Journal of Financial Research,* 37(2), 191-210.

Belghitar, Y. & Clark, E. (2015). Managerial risk incentives and investment related agency costs. *International Review of Financial Analysis*, 38, 191-197.

Belkhir, M. & Boubaker, S. (2013). CEO inside debt and hedging decisions: Lessons from the U.S. banking industry. *Journal of International Financial Markets Institutions and Money*, 24, 223-246

Benito, A., & Conyon, M. J. (1999). The governance of directors' pay: Evidence from UK companies. *Journal of Management and Governance, 3*(2), 117-136.

Benson, B. W., Park J. C., & Davidson, W. N. (2014). Equity-based incentives, risk aversion, and merger-related risk-taking behavior. *Financial Review*, 49(1), 117-148.

Berger, A. N., & Di Patti, E. B. (2006). Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry. *Journal of Banking & Finance*, *30*(4), 1065-1102.

Berger, P. G., Ofek, E., & Yermack, D. L. (1997). Managerial entrenchment and capital structure decision. *Journal of Finance*, 52(4), 1411- 1438.

Berkema, H. G., & Gomez-Mejia, L .R. (1998). Managerial compensation and firm performance: A general research framework. *Academy of Management Journal*, 41, 135-145.

Berle, A. A., & Means, G. C. (1932). The Modern Corporation and Private Property, Macmillian, New York.

Berthelot, S., Serret, V., Sylvain, J., & Coulmont, M. (2015). Impact of Say on Pay on Executive Compensation of firms listed on the Toronto Stock Exchange. *International Journal of Business and Management*, 10(12), 40-47.

Bertrand, M. & Mullainathan, S. (2003). Enjoying the quiet life? Corporate governance and managerial preferences. *Journal of Political Economy*, 111(5), 1043-1075.

Black, B. S., Jang, H., and Kim, W. (2006). Does corporate governance predict firms' market values? Evidence from Korea. *Journal of Law, Economics, and Organisation*, 22, 366-413.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143.

Boeker, W. (1997). Strategic change: The influence of managerial characteristics and organizational growth. *Academy of Management Journal*, 40,152-170.

Bradley, M., & Chen, D. (2015). Does board independence reduce the cost of debt? *Financial Management*, 44(1), 15-47.

Brickley, J. A. (2003). Empirical research on CEO turnover and firm-performance: A discussion. *Journal of Accounting and Economics*, 36, 227-233.

Buck, T., Bruce, A., Main, G.M.B., & Udueni, H. (2003). Long term incentive plans, executive pay and UK company performance. *Journal of Management Studies*, 40, 1709-1727.

Bushman, R., Dai, Z. & Wang, X. (2010). Risk and CEO turnover. *Journal of Financial Economics*, 96(3), 381-398.

Cadbury Report (1992) http://www.icaew.com/en/library/subject-gateways/corporate-governance/codes-and-reports/cadbury-report.

Cadman, B. C., Carter M. E & Hillegeist, S. (2010). The incentive of compensation and CEO pay. *Journal of Accounting and Economics*, 49, 263-280.

Cai, J., & Walkling, R. A. (2011). Shareholders' say on pay: Does it create value? *Journal of Financial and Quantitative Analysis*, *46*(02), 299-339.

Campbell, T. C., Gallmeyer, M., Johnson, S. A., Rutherford, J., & Stanley, B. W. (2011). CEO optimism and forced turnover. *Journal of Financial Economics*, 101(3), 695-712.

Cardak, A. B. & Wilkins, R. (2009). The determinants of household risky asset holdings: Australian evidence on background risk and other factors. *Journal of Banking and Finance*, 33(5), 850-860.

Carpenter, J. (2000). Does option compensation increase managerial risk appetite? *Journal of Finance*, 55, 2311–2331.

Chakraborty, A., Sheikh, S., & Subramanian, N., (2007). Termination risk and managerial risk taking. *Journal of Corporate Finance*, 13, 170–188.

Chava. S., & Purnanandam, A. (2010). CEOs versus CFOs: Incentives and corporate policies. *Journal of Financial Economics*, 97, 263-278.

Chen, C. H., & Al-Najjar, B. (2012). The determinants of board size and independence: Evidence from China. *International Business Review*, 21(15), 831-846.

Chen, C. R., Steiner, T. L., & Whyte, A. M. (2006). Does stock option-based executive compensation induce risk-taking? An analysis of the banking industry. *Journal of Banking & Finance*, *30*(3), 915-945.

Chen, D., & Zheng, Y. (2014). CEO tenure and risk-taking. *Global Business and Finance Review*, *19*(1), 1-27.

Chen, T. (2014). The non-monotonic effect of board independence on credit ratings. *Journal of Financial Services Research*, 45(2), 145-171.

Chen, T. (2015). Institutions, board structure, and corporate performance; Evidence from Chinese firms. *Journal of Corporate Finance*, 32, 217-237.

Chen, X., Cheng, Q., & Wang, X. (2015). Does increased board independence reduce earnings management? Evidence from recent regulatory reforms. *Review of Accounting Studies*, 20(2), 899-933.

Cheng, S. (2008). Board size and the variability of corporate performance. *Journal of Financial Economics*, 87(1), 157-176.

Child, J. (1974). Managerial and organizational factors associated with company performance. *Journal of Management Studies*, 11(1-2), 12–27.

Chintrakarn, P., Jiraporn, P., & Tong, S. (2015). How do powerful CEOs view corporate risk-taking? Evidence from the CEO pay slice (CPS). *Applied Economics Letters*, 22, 104-109.

Cho, M. (1998). Ownership structure, investment, and the corporate value: An empirical analysis. *Journal of Financial Economics*, 47(1), 103-121.

Chok, J. I., & Sun, Q. (2007). Determinant of idiosyncratic volatility for biotech IPO firms. *Financial Management*, 36, 107–22.

Cohen, R. B., Hall, B. J., & Viceira, L. M. (2000). Do executive stock option encourage risk-taking? Working Papers, Harvard University, Graduate School of business Administration.

Cohen, L., Frazzini, A., & Malloy, C., (2008). The small world of investing: board connections and mutual fund returns. *Journal of Political Economics*, 116, 951–979.

Coles, J. L., Lemmon, M. L., & Naveen, L. (2003). A comparison of profitability and CEO turnover sensitivity in large private and public firms. Available at SSRN: http://ssrn.com/abstract=391103 or http://dx.doi.org/10.2139/ssrn.391103

Coles, J.L., Daniel, N.D., & Naveen, L. (2008). Boards: does one size fit all? *Journal of Financial Economics,* 87(2), 329-356.

Coles, J., Lemmon, M., & Meschke, F. (2012). Structural models and endogeneity in corporate finance: the Link between managerial ownership and corporate performance. *Journal of Financial Economics,* 103(1), 149-168.

Coles, J.L., Daniel, N.D., & Naveen, L. (2006). Managerial incentives and risk-taking. *Journal of Financial Economics,* 79(2), 431-468.

Conyon, M. & Sadler, G. (2001). Executive pay, tournaments and corporate performance in UK firms. *International Journal of Management Reviews*, 3(2), 141-168.

Conyon, M., & Sadler, G. (2010). Shareholder voting and directors' remuneration report legislation: Say on Pay in the UK. *Corporate Governance: An International Review*, 18(4), 296-312.

Conyon, M., & Murphy, K. (2000). The prince and the pauper? CEO pay in the United States and United Kingdom. *Economic Journal*, 110(467), 640-671.

Conyon, M. J. (1997). Corporate governance and executive compensation. *International Journal of Industrial Organization*, 15, 493-509.

Conyon, M., Peck, S., Read, L., & Sadler, G. (2009). Compensation consultants and executive pay: evidence from the United States and the United Kingdom. *Academy of Management Perspectives*, 23(1), 43-55.

Core, J., & Guay, W. (2002). Estimating the value of employee stock option portfolios and their sensitivities to price and volatility. *Journal of Accounting Research, 40*(3), 613-630.

Core, J., Holthausen, R. & Larcker, D. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, 51(3), 371-406.

Core, J.E., Guay, W.R., & Larcker, D. F. (2003). Executive equity compensation and incentives: A survey. *Economic Policy Review*, 9(1), 27-50.

Correa, R., & Lel, U. (2014). Say on pay laws, executive compensation, pay slice, and firm valuation around the world. Available at SSRN: http://ssrn.com/abstract=2430465 or http://dx.doi.org/10.2139/ssrn.2430465.

Crainich, D., Eeckhoudt, L., & Courtois, O. (2014). Decreasing downside risk aversion and background risk. *Journal of Mathematical Economics*, 53, 59-63.

Cremers, M. & Palia, D. (2011). Tenure and CEO pay. Available at SSRN: http://ssrn.com/abstract=1626950 or http://dx.doi.org/10.2139/ssrn.1626950.

Cyert, R. & March J. (1963). *A behavioural theory of the firm*. Prentice Hall: Englewood Cliffs, NJ.

Cziraki, P. & Xu, M. (2013). CEO career concerns and risk taking. Available at SSRN: http://ssrn.com/abstract=2343541 or http://dx.doi.org/10.2139/ssrn.2343541.

Daily, C. M., & Johnson, J. L. (1997). Sources of CEO power and firm financial performance: A longitudinal Assessment. *Journal of Management*, 23(2), 97- 117

Davies, J. R., Hiller, D., & McClogan, P. (2005). Ownership structure, managerial behaviour and corporate value. *Journal of Corporate Finance*, 11(4), 645-660.

Davis, J.H., Schoorman, F. D. & Donaldson, L. (1997). Towards a stewardship theory of management. *Academy of Management Review,* 22(1), 20-47.

DeFond, M. L., & Park, C. W. (1999). The effect of competition on CEO turnover. *Journal of Accounting and Economics*, *27*(1), 35-56.

DeFond, M., & Park, C., (1997). Smoothing income in anticipation of future earnings. *Journal of Accounting and Economics*, 23(2), 115–139.

DeFusco, R. A., Johnson, R. R., & Zorn, T. S. (1990). The effect of executive stock option plans on stockholders and bondholders. *Journal of Finance,* 45, 617-627**.**

Dezsö, C. L., & Ross, D. G. (2012). Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal*, *33*(9), 1072-1089.

Demsetz, H. & Villalonga, B. (2001). Ownership Structure and Corporate Performance. *Journal of Corporate Finance*, 7(3), 209–233.

Demsetz, H., & Lehn, K., (1985). The structure of corporate ownership: causes and consequences. *Journal of Political Economy*, 93(6), 1155–77.

Denis, D., Denis, D. & Sarin, A. (1997). Ownership structure and top executive turnover. *Journal of Financial Economics*, 45(2), 193-221.

Devers, C. E., Cannella, A. A., Reilly, G.P., & Yoder, M. E. (2007). Executive compensation: a multidisciplinary review of recent developments. *Journal of Management*, 33(6), 1016-1072.

Devers, C. E., McNamara, G., Wiseman, R. M., & Arrfelt, M. (2008). Moving closer to the action: examining compensation design effects on firm risk. *Organization Science*, 19, 548-566.

Dikolli, S.S., Myew, W.J. & Nanda, D. (2014). CEO tenure and the performance turnover relation. *Review of Accounting Studies*, 19(1), 281-327.

Donaldson, L. and Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management*, 16, 49-64.

Dong, J., & Gou, Y. (2010). Corporate governance structure, managerial discretion, and the R&D investment in China. *International Review of Economics and Finance*, 19(2), 180–188.

Duchin, R., Matsusaka, J., & Ozbas, O. (2010). When are outside directors effective? *Journal of Financial Economics*, 96(2), 195-214.

Eeckhoudt, L., Gollier, C. & Schlesinger, H. (1995). The risk averse (and Prudent) Newsboy. *Management Science*, 41, 786-794.

Eeckhoudt, L., Gollier. C., & Schlesinger, H. (1996). Changes in background risk and risk taking behavior. *Econometrica*, 64, 683–689.

Eeckhoudt, L., & Schlesinger, H. (2006). Putting risk in its proper place. *American Economic Review*, 96, 280–289.

Eichner, T. & Wagener, A. (2012). Tempering effect of (dependent) background risk: a mean-variance analysis of portfolio selection. *Journal of Mathematical Economics*, 48, 422-430.

Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of Financial Economics*, *48*(1), 35-54.

Eisenhardt, K. (1989). Agency theory: an assessment and review. *The Academy of Management Review*, 14, 57-74.

Engelberg, J., Gao, P., & Parsons, C. A. (2013). The price of a CEO's rolodex. *Review of Financial Studies*, *26*(1), 79-114.

Epps, R. W., & Cereola, S. J. (2008). Do institutional shareholder services (ISS) corporate governance ratings reflect a company's operating performance? *Critical Perspectives on Accounting*, *19*(8), 1135-1148.

Executive Remuneration. Discussion paper (September 2011), Department for Business Innovation & Skills (BIS).

Ezzamel, M., & Watson, R. (1998). Market comparison earnings and the bidding-up of executive cash compensation: evidence from the United Kingdom. *Academy of management Journal*, 41, 221-231.

Fama, E. F. (1980) Agency problems and the theory of the firm. *Journal of Political Economy*, 88, 288-307.

Farrell, K. A., & Whidbee, D. A. (2003). Impact of firm performance expectations on CEO turnover and replacement decisions. *Journal of Accounting and Economics*, *36*(1), 165-196.

Federal Reporting Council (2002): Directors' Remuneration Report Regulation.

Federal Reporting Council (2010) https://www.frc.org.uk/Our-Work/Codes-Standards/Corporate-governance/UK-Corporate-Governance-Code.aspx

Ferri, F., & Maber, D. A. (2013). Say on pay votes and CEO compensation: evidence from the UK. *Review of Finance*, *17*(2), 527-563.

Finkelstein, S. (1992). Power in top management teams: dimensions, measurement, validation. *Academy of Management Journal*, 35, 505-538.

Finkelstein, S., & Hambrick, D. C. (1990). Top management team tenure and organizational outcomes: the moderating role of managerial discretion. *Administrative Science Quarterly*, 35, 484–503.

Fiordelisi, F., & Ricci, O. (2014). Corporate culture and CEO turnover. *Journal of Corporate Finance*, 28, 66-82.

Franke, G., Schlesinger, H., & Stapleton, R. C. (2006). Multiplicative background risk. *Management Science*, 52(1), 146-153.

Franke, G., Schlesinger, H., & Stapleton, R. C. (2011). Risk taking with additive and multiplicative background risk. *Journal of Economic Theory*, 146, 1547-1568.

Franke, G., Stapleton, R. C., & Subrahmanyam, M.G. (2004). Background risk and the demand for state-contingent claims. *Journal of Economic Theory*, 23, 321-335.

Frydman, C., & Saks, R. E. (2010). Executive compensation: a new view from a long-term perspective, 1936–2005. *Review of Financial Studies*, *23*(5), 2099-2138.

Fudenberg, D., & Tirole, J. (1995). A theory of income and dividend smoothing based on incumbency. *Journal of political Economy*, 103, 75-93.

Gabix, X., & Landier, A. (2008). Why has CEO pay increased so much? *Quarterly Journal of Economics* , 123, 49-100.

Gao, H., Harford, J., & Li, K. (2009). Incentive effects of extreme CEO pay cuts. Available at http://finance.sauder.ubc.ca/conferences/summer2009/files/papers/JarradHarford.pdf .

Garen, J. E. (1994). Executive compensation and principal-agent theory. *Journal of Political Economy*, 102, 1175-1199.

Geletkanycz, M.A., & Boyd, B. K. (2011). CEO outside directorships and firm performance: A reconciliation of agency and embeddedness views. *Academy of Management Journal*, 54(2), 335-352.

Gibbons, R., & Murphy, K. J. (1992). Optimal incentive contracts in the presence of career concerns: theory and evidence. NBER working paper series.

Gillan, S., Hartzell, J. C., & Starks, L. T. (2003). Explaining Corporate Governance: boards, bylaws, and charter provisions. Weinberg Center for Corporate Governance Working Paper No. 2003-03. Available at SSRN: http://ssrn.com/abstract=442740 or http://dx.doi.org/10.2139/ssrn.442740.

Goh, L., & Gupta, A. (2010). Executive compensation consultants and shopping for opinion: evidence from the United Kingdom. *Journal of Accounting, Auditing and Finance*, 25, 607-643.

Gollier, C. (2001). The Economics of Risk and Time. MIT Press, Cambridge.

Gollier, C., & Pratt. J. W. (1996). Weak proper risk aversion and the tempering effect of background risk. *Econometrica*, 64, Pp.1109–1123.

Goyal, V. K., & Park, C. W. (2002). Board leadership structure and CEO turnover. *Journal of Corporate Finance*, 8(1), 49-66.

Graham J. R., Li, S., & Qui, J. (2012). Managerial attributes and executive compensation. *Review of Financial Studies*, 25, 144-186.

Greenbury Report (1995): http://www.icaew.com/en/library/subject-gateways/corporate-governance/codes-and-reports/greenbury-report.

Gregg, P., Jewell, S., & Tonks, I. (2005). Executive pay and performance in the UK 1994 – 2002. Working paper, XFi Centre for Finance and Investment.

Guay, W. R. (1999). The sensitivity of CEO wealth to equity risk: an analysis of the magnitude and determinants. *Journal of Financial Economics*, 53(1), 43-71.

Guest, P. M. (2008). The determinants of board size and composition: evidence from the UK. *Journal of Corporate Finance*, *14*(1), 51-72.

Guest, P. M. (2010). Board structure and executive pay: evidence from the UK. *Cambridge Journal of Economics*, 34, 1075- 1096.

Guiso, L., & Paiella, M. (2008). Risk aversion, wealth and background risk. *Journal of the European Economic Association*, 6, 1109-1150.

Gujarati, D. (2004). *Basic Econometrics (4th Ed.)*, New York; London: McGraw-Hill.

Guo, W., Shiah-Huo, S., & Yang, Y. (2006). Stock bonus compensation and firm performance in Taiwan. *Managerial Finance*, 32(11), 862-885.

Gupta, A. K., & Govindarajan, V. (1984). Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. *Academy of Management journal*, *27*(1), 25-41.

Gupta, M., & Fields, L. P. (2009). Board independence and corporate governance: evidence from director resignations. *Journal of Business Finance & Accounting*, *36*(1-2), 161-184.

Hall, B., & Leibman, J. (1998). Are CEOs really paid like bureaucrats? *Quarterly Journal of Economics*, 113, 653-691.

Hambrick, D. C. & Mason, P. (1984). Upper echelons: the organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206.

Hambrick, D. C., & Fukutomi, G. (1991). The seasons of a CEO's tenure. *Academy of Management Review*, 16(4), 719–742.

Hampel Report (1998): http://www.icaew.com/en/library/subject-gateways/corporate-governance/codes-and-reports/hampel-report

Hartzell, J. C. (1998). The impact of the likelihood of turnover on executive compensation. Working paper series, Department of Finance, New York University.

Haugen, R.A., & Senbet, L.W. (1981). Resolving the agency problems of external capital through options. *Journal of Finance*, 36, 629–647.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, 46, 1251-1271.

Hazarika, S., Karpoff, M.J., & Nahata, R. (2012). Internal corporate governance, CEO turnover, and earnings management. *Journal of Financial Economics,* 104(1), 44–69.

Heaton, J., & Lucas, D. (2000). Portfolio choice in the presence of background risk. *Economic Journal*, 110(460), 1-26.

Henderson, A. D., Miller, D. & Hambrick, D. C. (2006). How quickly do CEOs become obsolete? Industry dynamism, CEO tenure, and company performance. *Strategic Management Journal*, 27, 447-460.

Hengartner, L. (2006). Explaining executive pay: the roles of managerial power and complexity, PhD Thesis, *Graduate School of Business Administration, The University of St. Gallen*, 1-230.

Herberich, D. H., & List, J. A. (2012). Digging into background risk: experiments with farmers and students. *American Journal of Agriculture Economics*, 94, 457-463.

Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, 88, 96-118.

Higgs Report (2003): http://www.icaew.com/en/library/subject-gateways/corporate-governance/codes-and-reports/higgs-report

Hill, C. W., & Phan, P. (1991). CEO tenure as a determinant of CEO pay. *Academy of Management journal*, *34*(3), 707-717.

Himmelberg, C. P., Hubbard, G. R., & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of Financial Economics*, 53(3), 353–84.

Holthausen, R.W., Larcker, D. F., & Sloan, R. G. (1995). Annual bonus schemes and the manipulation of earnings. *Journal of Accounting and Economics*, 19, 29-74.

Hsu, H., & Wu, C. Y. (2014). Board composition grey directors and corporate failures in the UK. *The British Accounting Review*, 46(3), 215- 227.

Huang, S. (2013). Zombie boards: board tenure and firm performance. Available at SSRN: http://ssrn.com/abstract=2302917 or http://dx.doi.org/10.2139/ssrn.2302917

Hubbard, R. G., & Palia, D. (1995). Executive pay and performance, evidence from the US banking industry. *Journal of Financial Economics*, 39(1), 105-130.

Huson, M. R., Malatesta, P. H., & Parrino, R. (2004). Managerial succession and firm performance. *Journal of Financial Economics*, *74*(2), 237-275.

Hwang, B. H., & Kim, S. (2009). It pays to have friends. *Journal of Financial Economics*, *93*(1), 138-158.

Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, *48*(3), 831-880.

Jensen, M., & Murphy, K. (1990). Performance pay and top-management incentives. *Journal of Political Economics*, 98, 225-264.

Jensen, M., & Murphy, K. (1990). Performance pay and top-management incentives. *Journal of Political Economics*, Vol. 98, Pp. 225-264.

Jensen, M. & Meckling, W. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305-360.

Jenter, D., & Kanaan, F. (2015). CEO turnover and performance evaluation. *Journal of Finance*, 70, 2155- 2184.

Jenter, D., & Lewellen, K. (2010). Performance-induced CEO turnover, Working Paper, Stanford University.

Jiang, C., Ma, Y., & An, Y. (2010). An analysis of portfolio selection with background risk. *Journal of Banking and Finance*, 34(12), 3055-3060.

Jokung, O. (2008). Prudence with multiplicative risk. EDHEC- Risk Institute, Working paper series.

Jokung, O. (2013). Changes in multiplicative background risk and risk-taking behaviour, *Theory and Decision*, 74, 127-149.

Jones, I., & Pollitt, M. (2004). Understanding how issues in corporate governance develop: Cadbury report to Higgs review. *Corporate Governance: An International review*, 12, 162-171.

Kaplan, S. N., & Mitton, B. A. (2012). How has CEO turnover changed*? International Review of Finance*, 12, 57-87.

Kempf, A., Ruenzi, F., & Thiele, T. (2009). Employment risk, compensation incentives, and managerial risk taking: Evidence from the mutual fund industry. *Journal of Financial Economics*, 92, 92-108.

Kerr, J., & Bettis, R. A. (1987). Boards of directors, top management compensation, and shareholder returns. *Academy of Management Journal*, 30, 645-664.

Khurana, R. (2000). Three-party exchanges: the case of executive search firms and CEO search. Unpublished working paper. Harvard Business School.

Kim, B., Burns, M. L., & Prescott, J. E. (2009). The strategic role of the board: the impact of board structure on top management team strategic action capability. *Corporate Governance: An International Review*, 17, 728–743.

Kim, K. & Nofsinger, J. (2007). *Corporate Governance* (2nd Ed.*)*, USA: Pearson International.

Kimball, M. S. (1993). Standard Risk Aversion, *Econometrica*, 61(3), 589-611.

Kimball, M.S. (1992). Precautionary motives for holding assets. In Newman, P., Milgate, M., and Falwell, J. eds. New Palgrave Dictionary of Money and Finance, Vol. 3. London, MacMillan, pp. 158-161.

Kingsmill, S. (1999). Turnbull and transparency: companies are being forced into a radical reassessment of their internal controls', London Financial News, 4th October 1999, in Jones, I., & Pollitt, M. (2001). *Who Influences Debates in Business Ethics? An Investigation into the Development of Corporate Governance in the U.K since 1990.*ESRC Centre for Business Research, University of Cambridge Working Paper, 221,pp. 1-45.

Klassen, R. D & McLaughlin, C. P. (1996). The impact of environmental management on firm performance. *Management Science*, 42(8), 1199-1214.

Knight, F. H. (1921). Risk, Uncertainty, and Profit. New York: Hart, Schaffner, and Marx

Knopf, J., Nam Jr., J., & Thorton, J. (2002). The volatility and price sensitivities of managerial stock option portfolios and corporate hedging. *Journal of Finance*, 57, 801-814.

Koerniadi, H. & Tourani-Rad, A. (2012). Does board independence matter? Evidence from New Zealand. *Australasian Accounting Business & Finance Journal*, 6(2), 3-18.

Kramarz, F. & Thesmar, D (2013). Social networks in the boardroom. *Journal of the European Economic Association,*11(4), 780–807.

Lambert, R. A., Larcker, D. F., & Weigelt, K. (1991). How sensitive is executive compensation to organisational size? *Strategic Management Journal*, 12, 395-402.

Lambert, R. A., Larcker, D. F., & Verrecchia, R. E. (1991). Portfolio considerations in valuing executive compensation. *Journal of Accounting Research*, 129-149.

Lambert, R. A., Larker, D. F. & Weigelt, K. (1993). The structure of organizational incentives. *Administrative Science Quarterly,* 38, 438-461.

Larcker, D. F., So, E. C., & Wang, C. C.Y. (2013). Boardroom centrality and firm performance. *Journal of Accounting and Economics*, 55(2), 225-250.

Larraza-Kintana, M., Wiseman, R. M., Gomez-Mejia, L. R., & Welbourne, T. M. (2007). Disentangling compensation and employment risks using the behavioral agency model. *Strategic Management Journal,* 28, 1001-1019.

Laux, V. (2008). Board independence and CEO turnover. *Journal of Accounting Research*, 46(1), 137-171.

Lee, K.W., Lev, B., & Yeo, G.H., (2008). Executive pay dispersion, corporate governance and firm performance. *Review of Quantitative Finance and Accounting*, 30(3), 315-338.

Lel, U., Miller, D. P., & Reisel, N. (2014). Differences in agency problems between public and private firms: evidence from top management turnover. Available at SSRN: http://ssrn.com/abstract=2404539 or http://dx.doi.org/10.2139/ssrn.2404539.

Lewellen, K. (2006). Financing decisions when managers are risk averse. *Journal of Financial Economics*, 82, 551-590.

Lewellen, K. (2006). Financing decisions when managers are risk averse. *Journal of Financial Economics*, 82, 551-590.

Lewellyn, K. B., & Muller-Khale, M. I. (2012). CEO power and risk taking: evidence from the subprime lending industry. *Corporate Governance: An International Review*, 20, 289-307.

Li, J. (2011). The demand for a risky asset in the presence of a background risk. *Journal of Economic Theory*, 146, 372-391.

Liang, Q., Xu, P., & Jiraporn, P. (2013). Board characteristics and Chinese bank performance. *Journal of Banking and Finance*, 37(8), 2953- 2968.

Lin D., Kuo H & Wang, L. (2013). Chief executive compensation: an empirical study of fat cat CEOs. *The International Journal of Business and Finance Research*, 17, 27-42.

Lin, W., & Lu, J. (2012). Risky asset allocation and consumption rule in the presence of background risk and insurance markets. *Insurance: Mathematics and Economics*, 50, 150-158.

Linck, J. S., Netter, J. M., & Yang, T. (2008). The determinants of board structure. *Journal of Financial Economics*, *87*(2), 308-328.

Lipton, M., & Lorsch, J. (1992). A modest proposal for improved corporate governance. *Business Lawyer*, 48, 58–77.

Liu, Y. (2014). Outside options and CEO turnover: the network effect. *Journal of Corporate Finance*, *28*, 201-217.

Liu, Y., Miletkov, M. K., Wei, Z., & Yang, T. (2015). Board independence and firm performance in China. *Journal of Corporate Finance, 30*, 223-244.

Lodh, S., Nandy, M., & Chen, J. (2014). Innovation and family ownership: empirical evidence from India. *Corporate Governance: An International Review*, 1, 4- 23.

Low, A. (2009). Managerial risk-taking behaviour and equity-based compensation. *Journal of Financial Economics*, 92(3), 470-490.

Lu, J., & Wang, W. (2015). Board independence and corporate investment. *Review of Financial Economics*, 24, 52-64.

Main, B. G. M. (2008). Directors' remuneration and the DTI review of company law. *Economic Affairs*, 21, 48-54.

Mallin, C. A. (2010). Corporate Governance' 3rd Edition, Oxford University Press.

Mallin, C. A. (2013). Corporate Governance' 4rd Edition, Oxford University Press.

March, J. G., & Shapira, Z. (1987). Managerial perspectives on risk and risk taking. *Management Science,* 33, 1404-1418.

Marra, A., Mazzola, P., & Prencipe, A. (2011). Board monitoring and earnings management Pre- and Post- IFRS. *International Journal of Accounting*, 46(2), 205-230.

Martin, G. P., Gomez-Mejia L. R., & Wiseman, R. M. (2013). Executive stock options as mixed gambles: revisiting the behavioral agency model. *Academy of Management Journal,* 56(2), 451-472.

Matolcsy, Z. (2000). Executive cash compensation and corporate performance during different economic cycles. *Contemporary Accounting Research*, 17, 671-692.

McClelland, P.L., Baker, V.L., & Oh, W. (2012). CEO career horizon and tenure: future performance implications under different contingencies. *Journal of Business Research*, 65(9), 1387- 1393.

McKnight, P. & Tomkins, C. (1999). Top executive pay in the United Kingdom: a corporate governance dilemma, *International Journal of the Economics of Business*, 6(2), 223-243.

Mehran, H. (1995). Executive compensation structure, ownership, and firm performance. *Journal of Financial Economics*, *38*(2), 163-184.

Miller, D. (1991). Stale in the saddle: CEO tenure and the match between organization and environment. *Management Science*, 37(1), 34–52.

Miller, D., & Shamsie, J. (2001). Learning across the life cycle: experimentation and performance among the Hollywood studio heads. *Strategic Management Journal,* 22(8), 725–745.

Monem, R. M. (2013). Determinants of board structure: evidence from Australia. *Journal of Contemporary Accounting and Economics*, 9(1), 33-49.

Murphy, K. J., & Sandino, T. (2010). Executive pay and "independent" compensation consultant. *Journal of Accounting and Economics*, 49. 247-262.

Murphy, K. (1986). Top executives are worth every nickel they get. *Harvard Business Review*, 64(2), 125-132.

Murphy, K. (1999). *'Chapter 38: Executive compensation*', in Ashenfelter, O. and Layard, R. (Eds.), *Handbook of Labor Economics*, Vol. 3a, Amsterdam: Elsevier Science, 2485-2563.

Muth, M. M., & Donaldson, L. (1998). Stewardship theory and the board structure: a contingent approach. *Corporate Governance: An International Review*, 6, 5-28.

Myners Report (2001) http://www.icaew.com/en/library/subject-gateways/corporate-governance/codes-and-reports/myners-report

Myners Review (2004): http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/newsroom_and_speeches/press/2004/press_109.cfm.

Nakano, M., & Nguyen, P. (2012). Board size and corporate risk taking: further evidence from Japan. *Corporate Governance: An International Review*, 20(4), 369-387.

Nguyen, B. D. (2012). Does the rolodex matter? Corporate elite's small world and the effectiveness of boards of directors. *Management Science*, 58(2), 236–252.

O'Connell, V., & Cramer, N. (2010). The relationship between firm performance and board characteristics in Ireland. *European Management Journal*, 28(5), 387-399.

Osma, B. G. (2008). Board independence and real earnings management: the case of R&D expenditure. *Corporate Governance: An International Review*, 16(2), 116-131.

Ozkan, A., & Ozkan, N. (2004.) Corporate cash holdings: an empirical investigation of UK companies. *Journal of Banking and Finance*, 28(9), 2103-2134.

Ozkan, N. (2007). Do corporate governance mechanisms influence CEO compensation? An empirical investigation of UK Companies. *Journal of Multinational Financial Management*, 17349–364.

Ozkan, N. (2011). CEO compensation and firm performance: an empirical investigation of UK panel data. *European Financial Management*, 17(2), 260–285.

Padgett, C. (2011). *Corporate governance: theory and practice*. Palgrave Macmillan.

Park, Y. W., & Shin, H. (2004). Board composition and earnings management in Canada. *Journal of Corporate Finance*, 10(3), 431-457.

Parrino, R. (1997). CEO turnover and outside succession, a cross-sectional analysis. *Journal of Finance*, 46(2), 165-197.

Pathan, S. (2009). Strong boards, CEO power and bank risk-taking. *Journal of Banking & Finance*, 33(7), 1340–1350.

Pathan, S. & Faff, R. (2013). Does board structure in banks really affect their performance? *Journal of Banking and Finance*, 37(5), 1573- 1589.

Pepper, A., Gore, J., & Crossman, A. (2013). Are long-term incentive plans an effective and efficient way of motivating senior executives? *Human Resource Management Journal*, 23, 36-51.

Perry, T., & Zenner, M. (2001). Pay for performance? Government regulation and the structure of compensation contracts. *Journal of Financial Economics*, 62(3), 453-458.

Pfeffer, J., & Salancik, G. (1978). *The external control of organizations: a resource-dependence perspective*. NewYork: Harper & Row.

Pratt, J. W. (1964). Risk aversion in the small and in the large. *Econometrica,* 32, 122-136.

Pratt, J.W. (1988). Aversion to one risk in the presence of others. *Journal of Risk and Uncertainty*, 1, 395-413.

Pratt, J. W., & Zeckhauser, R. (1987). Proper risk aversion. *Econometrica*, 55, 143-154.

Rabin, M. (2000). Risk aversion and expected-utility theory: A calibration theorem. E*conometrica*, *68*(5), 1281-1292.

Raheja, C.G. (2005). Determinants of board size and composition: a theory of corporate boards. *Journal of Financial and Quantitative Analysis*, 40(2), 283–306.

Rajgopal, S. & Shevlin, T. (2002). Empirical evidence on the relation between stock option compensation and risk taking. *Journal of Accounting and Economics*, 33(2), 145-171.

Renneboog, L., Zhao, Y. (2011). US knows us in the UK: on director networks and managerial compensation. *Journal of Corporate Finance*, 17(4), 1132–1157.

Renneboog, L., & Zhao, Y. (2014). Director networks and takeovers. *Journal of Corporate Finance*, 28, 218-234.

Roberts, M.R. & Whited, T. M. (2012) Endogeneity in Empirical Corporate Finance. Simon School Working Paper No. FR 11-29. Available at SSRN: http://ssrn.com/abstract=1748604 or http://dx.doi.org/10.2139/ssrn.1748604

Rogers, D. (2005). Managerial risk-taking incentives and executive stock option repricing: a study of US Casino Executives. *Financial Management*, 34(1), 95-121.

Rogers, D. A. (2002). Does executive portfolio structure affect risk management? CEO risk-taking incentives and corporate derivatives usage. *Journal of Banking & Finance*, *26*(2), 271-295.

Roodman, D. (2006). How to do xtabond2: An introduction to difference and system GMM in Stata. *Center for Global Development working paper*, (103).

Ross, S. A. (1981). Some stronger measures of risk aversion in the small and the large with applications. *Econometrica*, 49(3), 621-638.

Ross, S. A. (2004). Compensation, incentives, and the duality of risk aversion and riskiness. *Journal of Finance,* 59, 207-225.

Rousseau, P.L., & Stroup, C. (2015). Director histories and the pattern of acquisitions. *Journal of Financial and Quantitative Analysis*, 50(4), 671- 698.

Ryan, H. E., & Wiggins, R. A. (2001). The influence of firm- and manager-specific characteristics on the structure of executive compensation. *Journal of Corporate Finance*, 7(2), 101-123.

Saeed, A., Belghitar, Y., & Clark, E. (2015). Political connections and firm operational efficiencies: evidence from a developing country. *Review of Managerial Science,* 1-34.

Sanders, W. G. (2001). Behavioural responses of CEOs to stock ownership and stock option pay. *Academy of Management Journal***,** 44, 477-492

Sanders, W. G., & Hambrick, D. C. (2007). Swinging for the fences: the effects of CEO stock options on company risk-taking and performance. *Academy of Management Journal,* 50, 1055-1078.

Setia-Atmaja, L., Haman, J., & Tanewski, G. (2011). The role of board independence in mitigating agency problem II in Australian family firms. *The British Accounting Review,* 43(3), 230-246.

Shaw, K. W., & Zhang, M. H. (2010). Is CEO cash compensation punished for poor firm performance? *The Accounting Review, 85*(3), 1065-1093.

Shleifer, A. & Vishny, R.W., (1997). A survey of corporate governance. *Journal of Finance*, 52, 737– 783.

Short, H., & Keasey, K. (1999). Managerial ownership and the performance of firms: Evidence from the UK. *Journal of Corporate Finance*, 5(1), 79- 101.

Simsek, Z. (2007). CEO tenure and organizational performance: an intervening model. *Strategic Management Journal*, 28, 653-662.

Smith Report (2003): http://www.icaew.com/en/library/subject-gateways/corporate-governance/codes-and-reports/smith-report.

Smith, C., & Stulz. R. (1985). The determinants of firms' hedging policies. *Journal of Financial and Quantitative Analysis,* 59, 391-405.

Solomon, J. (2007). Corporate Governance and Accountability (2nd Ed.), West Sussex: John Wiley & Sons, Ltd.

Spong, K. & Sullivan, R. (2007). Corporate Governance and Bank Performance. *Working Paper Series*, 1-30. Available at: http://ssrn.com/abstract=1011068

Taylor, R. N. (1975). Age and experience as determinants of managerial information processing and decision making performance. *Academy of Management Journal*, 18(1), 74–81.

Tervio M (2008). The difference that CEOs make: The assignment model approach. *American Economic Review*, 93, 642- 668.

Tong, Z. (2010). CEO risk incentives and corporate cash holdings. *Journal of Business Finance & Accounting*, 37, 1248–80.

Tosi, H. L., Warner, S., Katz, J. P., & Gomez-Mejia L. R (2000). How much doesperformance matter? A meta-analysis of CEO pay studies. *Journal of management*, 26, 301-339.

Tsetlin, I., & Winkler, R.L. (2005). Risky choices and correlated background risk. *Management Science*, 51, 1336-1345.

Turnbull report: http://www.icaew.com/en/library/subject-gateways/corporate-governance/codes-and-reports/turnbull-report.

Voulgaris G., Stathopoulos K., & Walker, M, (2010). Compensation consultant and CEO pay: UK evidence. *Corporate Governance: An International Review*, 18, 511-526.

Wang, T., & Hsu, C. (2013). Board composition and operational risk events of financial institutions. *Journal of Banking & Finance*, 37(6), 2042–2051.

Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, 20, 431–60.

Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics*, *126*(1), 25-51.

Wintoki, M.B., Linck, J.S., & Netter, J.M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, 105, 581-606.

Wooldridge, J. (2005). *Introductory Econometrics: A Modern Approach (3rd Ed.)*, New York; London: McGraw-Hill.

Wright, P., Ferris, S. P., Sarin, A., & Awasthi, V. (1996). Impact of corporate insider, blockholder, and institutional equity ownership on firm risk taking. *Academy of Management Journal*, 39, 441–458.

Yawson, A. (2006). Evaluating the characteristics of corporate boards associated with layoff decisions. *Corporate Governance: An International Review*, *14*(2), 75-84.

Yekini, K.C., Adelopo, I., Andrikopoulos, P., & Yekini, S. (2015). Impact of board independence on the quality of community disclosure in annual reports. *Accounting Forum*, 39(4), 249-267.

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40(2), 185-211.

Zheng, Y. (2010). The effect of CEO tenure on CEO compensation: Evidence from inside CEOs vs outside CEOs. *Managerial Finance*, 36, 832–859.

Zona, F. (2016). Agency models in different stages of CEO tenure: the effects of stock options and board independence on R&D investment. *Research Policy*, 45, 560-575.